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Transit Research & Technology Programs - Fiscal Year 2002 Report

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FOREWORD

The U.S. Department of Transportation, through the Federal Transit Administration (FTA), is improving public transit services for all American communities through innovative technologies and strategies, and technical assistance. An ongoing effort within FTA to provide innovative transit services to all transit customers, to increase transit ridership, and to advance electric and hybrid electric technologies in transit applications is providing the foundation for moving towards a safer, cleaner, and more secure and efficient way of transporting the traveling public.

Transit Research & Technology Program FY 2002 Report is designed to help our customers better understand the FTA role in delivering solutions that improve public transportation. The report's content will increase public awareness of the importance of transit research and innovation as a key means (1) to save lives and reduce the risk of crashes, injuries, and property damage, as well as to increase transit ridership, protect the environment, and to strengthen the nation's competitiveness in the global economy; and (2) to assist state and local agencies in improving all aspects of public transit service for transit customers, while enhancing air quality and community livability.

This report presents an overview of the FTA Transit Research & Technology Program—its mission, program areas, and research projects. The Research-in-Progress section includes summary descriptions of the 90 projects funded during FY 2002. Projects are listed under the National Research & Technology Program areas. All project activities are aimed at making measured improvements in security, safety, mobility, fuel efficiency, clean air, and professional capacity building. Improvements are accomplished through research, demonstration, testing, deployment and information transfer of innovative transit technologies and strategies.

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INTRODUCTION

Mission

The *Federal Transit Administration's (FTA) mission* is to improve public transportation for America's communities. The agency supports improvements to public transportation through leadership, technical assistance, and financial resources. To carry forward this mission, the FTA has charted a vision of leading America—*Public Transit is the Mode of Choice.*

The mission of the FTA Transit Research and Technology Program is to partner with the transportation industry in establishing preeminence in U.S. transit technology, institutions, and customer services, increasing the quality and level of transit services. The program's core effort is the deployment of technological innovation to improve personal mobility, minimize fuel consumption and air pollution, increase ridership, and enhance the quality of life of all communities.

The FTA research program is designed to deliver solutions that improve public transportation. The program has delivered new operational methods and technologies that have enabled transit agencies to improve their services and systems. As a result, transit agencies across the country are now implementing best practices and state of the art technologies to increase transit ridership, improve capital and operating efficiencies, improve safety and security, and protect the environment and promote energy security.

FTA's Office of Research, Demonstration and Innovation (TRI) has the lead within FTA for advancing transit research priorities to provide solutions for improving the transit industry. TRI's mission is to partner with the transit industry to undertake a comprehensive research program that provides for safer, more reliable and more efficient transit systems. TRI delivers more than half of the FTA research program through its management of the National Research and Technology Program (NRTP). Other offices within FTA, such as the Office of Safety and Security, Office of Policy Development, and the Office of Planning and Environment also manage portions of the NRTP.

TRI manages a number of research projects (earmarked) outside of the NRTP including: Transit Cooperative Research Program (TCRP); National Transit Institute (NTI); University Transportation Centers (UTS) program; Bus Testing Program; urban magnetic levitation (maglev) projects; Georgetown fuel cell bus facility; and transit projects from the Intelligent Transportation Systems Joint Program Office (ITS-JPO).

Federal Funding for Transit Research & Technology

Federal funds for transit research and technology comprise several programs, with recent budget levels as indicated in the following table.

Program	FY 2001 Enacted	FY 2002 Enacted	FY 2003 Enacted
		($ millions)	
National Research & Technology	$29.4	$31.5	$31.3
Transit Cooperative Research Program	8.2	8.2	8.2
National Transit Institute	4.0	4.0	4.0
University Transportation Research	6.0	6.0	6.0
Bus Testing	3.0	3.0	3.0
Fuel Cell Transit Bus	4.8	4.8	5.1
Urban Magnetic Levitation	4.4	4.4	5.1
Intelligent Transportation Systems–Transit	8.6	7.0	4.0

National Research & Technology

The National Research & Technology Program includes the following program areas: Safety & Security, Equipment & Infrastructure, Intelligent Transportation Systems/Fleet Operations, Specialized Customer Services, Metropolitan & Rural Policy Development, Planning & Project Development, Professional Capacity Building, Human Resources, International Mass Transportation Program, and Research & Technology Program Support.

Each project funded in FY 2002 is descriptively profiled and listed under one of the program areas in the Research in Progress section. All project activities in this section are aimed at making measured improvements in security, safety, mobility, fuel efficiency, clean air, and professional capacity building. Improvements are accomplished through research, demonstration, testing, deployment and information transfer of innovative transit technologies and strategies.

RESEARCH IN PROGRESS
2002 PROJECTS

The following ***Research in Progress*** *section* provides descriptive profiles of the 90 research projects funded by the Federal Transit Administration during fiscal year 2002. The projects were undertaken to improve transit security and safety, increase transit ridership, expand the range of mobility options, foster economic growth, protect the environment, and enable the Federal Transit Administration staff to provide a higher level of customer service.

The projects are organized within the following six emphasis areas of the *FTA Transit Research & Technology Five-Year Plan*—

1. Security and Safety
2. Equipment and Infrastructure
3. Fleet Operations
4. Specialized Customer Services,
5. Policy and Planning, and
6. Professional Capacity Building.

Each project entry is profiled separately and includes information on the research project objective, funding, investigator, performing organization, and the results expected.

Looking Ahead. Currently the FTA is working with key government and industry stakeholders to develop a new StrategicTransit Research Plan to replace the *Transit Research & Technology 5-Year Plan* that expired at the end of 2003.

Safety & Security Projects

GOAL: Eliminate transit-related deaths, injuries, and property damage, and improve personal security and property.

Chemical/Biological Emergency Management Information System-MBTA
Project MA-40-7002
FY 2002 Funding: $1,000,000 Schedule: September 2002 – June 2004
Performer: Massachusetts Bay Transportation Authority
10 Park Plaza, Boston, Massachusetts 02116
Investigator: Bill Fleming Phone: 617.222.5000 Fax: 617.222.6180
FTA Project Monitor: Rhonda Crawley, TRI Phone: 202.366.4035 Fax: 202.366.3765
Email [Rhonda.crawley@fta.dot.gov>]

Objective. To create a systems-based approach to chemical agent releases in enclosed rail facilities, and to provide transit agencies with chemical detection technology to address the threat of weapons of mass destruction.

Description. The open environment of subways, and other rail transit tunnel systems leave them particularly vulnerable to chemical terrorism. This project enables the Massachusetts Bay Transportation Authority (MBTA) to demonstrate and evaluate a prototype chemical agent sensor system to respond to terrorism—one that strengthens the security and emergency preparedness of an underground transit station in the MBTA system. The project will build upon lessons learned from the chemical agent sensor program initiated at the Washington Metropolitan Transit Authority (WMATA) system. Project activities will determine the effectiveness of chemical-agent detectors at high threat subway stations in Boston. Chemical agent detection technologies and video surveillance equipment will be installed, tested and evaluated at the MBTA subway stations. Operational tests will be conducted to determine the reliability and maintainability of the chemical agent detectors at high threat stations in Boston. This project advances the PROTECT program (Program for Response Options and Technology Enhancements for Chemical/Biological Terrorism) – a program for chemical and biological preparedness designed to improve the safety and security of transit systems against attacks by weapons of mass destruction. The project was undertaken through an interagency partnership between the FTA, MBTA, Departments of Energy and Homeland Security--to determine the effectiveness of chemical-agent detection devices at underground transit systems. PROTECT URL [http://transit-safety.volpe.dot.gov/security/pdf/protect_factsheet.pdf].

Results Expected. Establish a chemical sensor and decision support system with future expansion from chemical to biological response. Future results may include use of previously developed chemical emergency response and decision support tool.

Chemical/Biological Emergency Management Information System-WMATA
Project DC-40-7001
FY 2002 Funding: $1,700,000 Schedule: September 2002 – December 2003
Performer: Department of Energy, Office of Transportation Systems
1000 Independence Avenue, SW, Washington, DC 20585
Investigator: Anthony J. Policastro Phone: 630.252.6659 Fax: 630.252.3379
FTA Project Monitor: Rhonda Crawley, TRI Phone: 202.366.4035 Fax: 202.366.3765

Email: *[Rhonda.crawley@fta.dot.gov>]*

Objective. To enhance the existing systems-based approach for responding to chemical agent releases in the open environment of subways and rail tunnel systems. Transit agencies need effective support systems and reliable chemical detection technology to address this threat.

Description. Strengthening the security and emergency preparedness of transit systems against weapons of mass destruction is top priority in public transit. This project was undertaken to demonstrate and evaluate the operation and effectiveness of chemical agent detectors installed to harden the security and emergency preparedness at underground transit facilities in the Washington Metropolitan Area Transit Authority (WMATA) subway system. Operational tests will be conducted to determine the reliability and maintainability of chemical agent detectors at high threat transit stations. The project supports the PROTECT program—the National Nuclear Security Administration, Chemical/Biological National Security Program—that addresses the challenges of protecting the citizenry gathered in subways, airports and other interior spaces from chemical or biological attacks, by developing prototype warning and response systems. The project supports the Memorandum of Understanding between the Department of Transportation and the Department of Energy to enhance homeland security through the demonstration, evaluation, and deployment of innovative approaches to preparing for, and responding to terrorism.

Results Expected. Expand current chemical sensor and decision support system to multiple stations. Future Results may include use of previously developed chemical emergency response and decision support tool

Drug and Alcohol Management Information System
Project MA-26-5017
FY 2002 Funding: $1,100,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center, Kendall Square, Cambridge, Massachusetts 02142
Investigator: James A. Harrison Phone: 617.494.3450 Fax: 617.494.2902
FTA Project Monitor: Mark Snider, TPM Phone: 202.366.1080 Fax: 202.366.7951
Email [mark.snider@fta.dot.gov]

Objective. To support the collection, maintenance and analysis of the Drug and Alcohol Management Information System reports, submitted to FTA by more than 2,500 transit agency grantees—summarizing their drug and alcohol test results, and publishing these test results in an annual report.

Description. This ongoing project supports the FTA Final Drug and Alcohol Testing Regulations for Transit Employees, published February 1994, requiring each grant recipient to maintain records and submit annual reports to FTA summarizing the results of the agency's drug abuse and alcohol misuse prevention programs. Recipients of federal funds are required to implement drug and alcohol testing programs, and submit annual reports to FTA through the drug and alcohol management information system (DAMIS). These annual reports serve as an important source for evaluating the effectiveness of federal regulations and for

supporting future modifications. This project continues to support the collection and analysis of grantees' reports, summarizing and publishing their test results in an annual report. Data collected under this program are an important factor in FTA decisions concerning audits of drug and alcohol testing programs. A Congressionally Directed Project.

Results Expected. "Best Practices Manual: FTA Drug and Alcohol Testing Program."

Drug and Alcohol Regulatory Guidance and Updates
Project MA-26-5020
FY 2002 Funding: $250,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Alison Thompson Phone: 617.494.2108 Fax: 617.494.2902
FTA Project Monitor: Vicki Bellet, TPM Phone: 202.366.2780 Fax: 202.366.7951
Email [vicki.bellet@fta.dot.gov]

Objective. To assist transit agencies in achieving a drug- and alcohol-free workforce in the interest of the health and safety of employees and the traveling public.

Description. The FTA drug and alcohol regulations, 49 CFR Part 655, August 1, 2002, are designed to assist the transit industry in achieving a drug- and alcohol-free workforce in the interest of the health and safety of employees and the traveling public. To assist transit agencies in implementing these regulations, the agency published "Implementation Guidelines for Drug and Alcohol Regulations in Mass Transit," and a "Best Practices Manual" in 2002. Since the guidelines were originally published in 1994, there have been numerous amendments, interpretations, and clarifications to the drug and alcohol testing procedures and program requirements. To ensure that transit personnel are aware of all such changes, the Office of Safety and Security publishes the quarterly FTA Drug and Alcohol Updates. This project provides for the continued issuance of these Updates as well as for an updated guidelines manual. More than 6,000 organizations receive the updates.

Results Expected. Published reports, "Implementation Guidelines for Drug and Alcohol Regulations in Mass Transit," and "Over-the-Counter Medications Toolkit" to assist transit agencies in implementing these regulations. Both documents available online at Website URL [http://transit-safety.volpe.dot.gov/].

Drug and Alcohol Testing Compliance Audits
Project MA-90-5010
FY 2002 Funding: $1,500,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: James A. Harrison Phone: 617.494.3450 Fax: 617.494.2902
FTA Project Monitor: Mark Snider, TPM Phone: 202.366.1080 Fax: 202.366.7951
Email [mark.snider@fta.dot.gov]

Objective. To conduct onsite audits to ensure grantees' compliance with federal drug and alcohol testing regulations, and provide technical assistance and training.

Description. Audits are conducted to assist transit agencies in achieving a drug- and alcohol-free workforce in the interest of the health and safety of transit employees and the traveling public. This project provides ongoing support for the Drug and Alcohol Testing Compliance Audits program to ensure grantees' compliance with federal drug and alcohol testing regulations. Compliance audits are conducted on sites of transit agencies receiving federal funds and are based on a comprehensive review process, covering every aspect of an agency's drug and alcohol testing program. Audit findings and lessons learned are summarized periodically, published, and distributed to the transit community. Additional activities include technical assistance and training classes, conducted at various locations across the country. Under the Omnibus Transportation Employee Testing Act passed by Congress in 1991, FTA is required to establish regulations for drug and alcohol testing of transit employees performing safety-sensitive functions. A Congressionally Directed Project.

Results Expected. Conducted 37 audits and 10 drug and alcohol seminars

Fatigue Management Workshops
Project NJ-26-5001
FY 2002 Funding: $214,275 Schedule: October 2002 – September 2003
Performer: National Transit Institute
120 Albany Street, New Brunswick, New Jersey 08901-2163
Investigator: Renee Haider Phone: 732.932.1700 Fax: 732.932.1707
FTA Project Manager: Vicki Bellet, TPM Phone: 202.366.0191 Fax: 202.366.7951
Email [Vicki.bellet@fta.dot.gov] [safety@nti.Rutgers.edu]

Objective. To support the National Transit Institute effort to provide fatigue awareness training for the transit industry regarding drowsy driving and operator fatigue issues.

Description. The National Transit Institute will conduct a series of nine regional workshops on fatigue awareness for transit operators. The highlight of the workshops is the National Rollout of *TCRP Report 81: Toolbox for Transit Operator Fatigue*, developed under the FTA Transit Cooperative Research Program. The Toolbox includes a "how to" component on the design, implementation, and evaluation of fatigue-mitigation plans. The fatigue-mitigation plans may be used by senior managers, operations managers, safety officials, medical personnel, risk managers, human resource personnel, policymakers, and legal advisers. In 1995, the National Transportation Safety Board (NTSB) identified fatigue as a primary cause of a New York City Transit fatal accident on the Williamsburg Bridge. As a result, the NTSB recommended and Congress directed the FTA to conduct a continuing training program in fatigue awareness for transit operators. A Congressionally Directed Project.

Results Expected. "TCRP Report 81: Toolbox for Transit Operator Fatigue" assists transit agencies in development and implementation of fatigue-mitigation plans. Eight Fatigue Seminars were conducted across the nation. TCRP Report 81 available online at URL [http://www4.trb.org/trb/onlinepubs.nsf/web/crp].

Fire Safety Materials Testing
Project MA-26-5021
FY 2002 Funding: $100,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: James A. Harrison Phone: 617.494.3450 Fax: 617.494.2902
FTA Project Monitor: Roy Field, TPM Phone: 202.366.0197 Fax: 202.366.7951
Email [roy.field@fta.dot.gov]

Objective. To develop fire safety standards for performance and testing of interior materials for transit vehicles; and to update the FTA 1984 Recommended Fire Safety Practices for Rail Transit Materials Selection.

Description. This research will identify and evaluate the latest fire safety technology to update guidelines for rail transit vehicle fire safety practices, including development of fire safety standards for the performance and testing of interior materials. Use of these guidelines in the selection of materials for transit vehicles is intended to reduce fire incidents, costly property damage and casualties. This 2002 project supports the update of the 1984 guidelines, *Recommended Practices for Rail Transit Vehicle Materials Selection,* containing tests and performance criteria for seat components (e.g., upholstery, cushions, shrouds, and frames), panels (e.g., walls and ceilings, partitions, windscreens, windows, and light diffusers) and thermal and acoustical insulation, floor structure and covering, elastomers, exterior end caps, and interior and exterior box covers. A Congressionally Directed Project.

Results Expected. Revised "Recommended Fire Safety Practices for Rail Transit Materials Selection, " with criteria based on improved fire safety characteristics

Model Transit Bus Safety and Security Research Program
Project OH-26-5004
FY 2002 Funding: $500,000 Schedule: August 2002 - September 2003
Performer: Battelle Memorial Institute, Columbus Laboratories
505 King Avenue, Columbus, Ohio 43201-2693
Investigator: David P. Wagner Phone: 614.424.7381 Fax: 614.424.5069
FTA Project Monitor: Amy Jernigan, TPM Phone: 202.366.1639 Fax: 202.366.7951
Email [amy.Jernigan@fta.dot.gov]

Objective. To develop a Model Transit Bus Safety and Security Program.

Description. In response to the growing concerns of the Congress, the National Transportation Safety Board, and the FTA regarding the potential for catastrophic accidents involving bus transit systems, the Office of Safety and Security is examining the state of public transit bus safety. This research project will examine in detail the state of transit bus safety practices in the industry, provide technical assistance, and actively work with the industry to improve bus safety and develop a model transit bus safety program inclusive of the oversight function. Currently, state oversight of transit operations ranges from non-existent

to highly perfected safety programs supported by state legislation and administered by state level agencies. Federal regulations and oversight exist for rail fixed guideway transit systems (FTA) and commuter rail operations (Federal Railroad Administration), but there are no overall federal regulations requiring oversight for transit bus safety.

Results Expected. Guidance documents for the transit industry on the Model Transit Bus Safety and Security Program Core Elements of Security, Employee Selection, Employee Training, Vehicle Maintenance and Drug and Alcohol Programs.

National Response Center
Project DC-26-5008
FY 2002 Funding: $15,000 Schedule: October 2002 - October 2003
Performer: National Response Center
2100 Second Street, SW, Washington DC 20593
Investigator: Petty Officer Robey Phone: 405.954.9268 Fax: 405.954.0367
FTA Project Monitor: Dave Martin, TPM Phone: 202.366.3525 Fax: 202.366.7951
Email [dave.martin@fta.dot.gov]

Objective. To support the National Response Center's critical security information services.

Description. The National Response Center provides the FTA with real-time incident notification in accordance with the criteria established by the FTA. Incident Summary Reports describe significant environmental incidents reported to and tracked by the National Response Center. The Center is staffed by the U.S. Coast Guard personnel and located at U.S. Coast Guard Headquarters. The National Response Center maintains a toll free telephone number and is in operation twenty-four hours each day, seven days each week, and three hundred sixty-five days per year. Information about the National Response Center is available online at Internet URL [http://www.nrc.uscg.mil/nrchp.html].

Results Expected. Incident Summary Reports provide timely notification of significant transit-related incidents, reflecting both new incidents and follow-up information describing actions taken for previously reported events.

National Summit on Drowsy Driving
Project DC-26-5024
FY 2002 Funding: $73,150 Schedule: October 2002 – September 2003
Performer: National Sleep Foundation
1522 K Street, NW, Suite 500, Washington, DC 20005
Investigator: Darrell Drobnich Phone: 202.347.3471 Fax: 202.347.3472
FTA Project Manager: Vicki Bellet, TPM Phone: 202.366.0191 Fax: 202.366.7951
Email [vicki.bellet@fta.dot.gov]

Objective. To support the National Sleep Foundation effort to alert the public transit industry and others to the dangers of drowsy driving.

Description. This project enabled FTA to partner with National Sleep Foundation and others to conduct the *National Summit: The Many Faces of Drowsy Driving,* on November 20-21, 2002 at the National Academy of Sciences in Washington, D. C. The 2002 Summit brought together experts in various fields—transportation (transit, rail, motor carrier, aviation, and maritime), safety and health, sleep research, and communications—to create a comprehensive national agenda that would increase driver awareness of the dangers of drowsy driving. Recommendations from the Summit formed the basis of post-Summit activities, including development of a final report outlining an agenda for national, state, and local drowsy driving initiatives.

Results Expected. National Sleep Foundation will provide "Sleep for Success Toolkit" to be distributed at other fatigue workshops in 2003.

Operation Lifesaver Program
Project VA-26-5012
FY 2002 Funding: $200,000 Schedule: May 2002 - May 2003
Performer: Operation Lifesaver, Inc.
1420 King Street, Suite 401, Alexandria, Virginia 22314
Investigator: Gerri Hall Phone: 703.739.1065 Fax: 703.519.8267
FTA Project Monitor: Iyon U. Lyles, TSS Phone: 202.366.2010 Fax: 202.366.7951
Email [Iyon.lyles@fta.dot.gov]

Objective. To develop and promote a national light rail safety education program throughout the transit industry.

Description. Historically a nationally recognized safety education program, Operation Lifesaver has focused on grade-crossing safety and trespasser prevention programs for intercity freight railroads. Current interest in the growing number of urban area light rail system grade-crossings incidents and trespasser incursions generated the need for a transit-focused light rail safety education program. This project enables Operation Lifesaver to develop and implement an educational grade-crossing safety and trespasser prevention program for urban areas with expanded light rail systems. The safety education program will be designed for adults and children.

Results Expected. Safety education training materials usable by transit agencies around the country. Results are expected to reduce grade-crossing and trespasser accidents and incidents.

Passenger Security Virtual Reality Training Model
Project MA-26-7073.01
FY 2002 Funding: $200,000 Schedule: June 2002 – July 2003
Performer: Massachusetts Bay Transportation Authority (MBTA)
10 Park Plaza, Boston, Massachusetts 02116
Investigator: Ann M. McCall Phone: 617.222.1122 Fax: 617.222.1035
FTA Project Monitor: Rhonda Crawley, TRI Phone: 202.366.4047 Fax: 202.366.3765
Email [rhonda.crawley@fta.dot.gov]

Objective. To enhance transit security personnel responsiveness to deliberate acts of intentional harm in the transit environment, an innovative Virtual Reality Model for Law Enforcement Personnel will be developed and used to train first responders and others..

Virtual Reality is defined as an artificial environment created with computer programs, and presented to the user in such a way that it appears and feels like a real environment. These environments are used in real time to simulate life threatening situations and aid in training transit security personnel to react to potential terrorism events and violent criminal attacks.

Description. The Passenger Security Virtual Reality (PSVR) project investigates a Virtual Reality (VR) training model for transit police to counteract terrorist acts involving weapons for mass destruction--chemical, biological, and explosive agents that result in major loss of human life and destruction of property. The VR Model will be used to train first responders to terrorist incidents involving weapons of mass destruction and to prepare security personnel to effectively respond to catastrophic transportation incidents. The VR Model for law enforcement personnel will use virtual reality technology to simulate the transit environment, design and enhance security countermeasures, and train security professionals to respond to acts of intentional harm to transit passengers and the infrastructure. This amendment provides for delivery of a student training station with more advanced software and upgrades to both the instructor and student station software. The project added a generic bus and subway station model to the program that will be used for training purposes at other transit agencies. PSVR is a virtual reality environment that creates realistic, computer-generated simulations of transit environments, such as a subway station platform and transit vehicles.

Results Expected. MBTA Police Department will demonstrate and evaluate the VR technology, and develop standards for an effective VR Training Model for transportation security personnel and law enforcement professionals. A Final Report is due in September 2003, presenting the program highlights, lessons learned, and technology transfer activities.

Safety and Security Clearinghouse Website
Project MA-26-5019
FY 2002 Funding: $300,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Alison Thompson Phone: 617.494.2108 Fax: 617.494.2902
FTA Project Monitor: Vicki Bellet, TPM Phone: 202.366.2780 Fax: 202.366.7951
Email [vicki.bellet@fta.dot.gov]

Objective. To ensure new technical assistance and guidance documents are distributed to the transit industry in a timely manner; to provide transit industry with the information needed to identify and solve key safety and security problems.

Description. Under this project, the Volpe Center will continue to manage and operate both the Clearinghouse and the Transit Safety and Security Website services for FTA. The Clearinghouse serves as a storehouse of information and an ongoing focal point for published materials currently available on the subject of transit safety and security and related

technologies. Material is made available, upon request. The clearinghouse function enables FTA to dialogue with transit safety and security customers, and provides a quick response mechanism for information dissemination. Customer assistance is provided in the form of guidelines, reports, expert advice, referrals to experts, and access to the FTA website. The Transit Safety and Security Website provides rapid access to information that planners, managers, and federal officials need to assess safety and security programs and capital program requirements. The website provides the industry with a central communication point for transit safety and security concerns. The website has been undergoing significant enhancements. Information currently available to website users include: training opportunities, subscription service, calendar of activities, DOT and FTA hearings, regulations, research and statistical reports, and links to other resources.
Website URL [http://transit-safety.volpe.dot.gov/]

Results Expected. In 2002, two security guidance documents were distributed to Law Enforcement Officials and General Managers; three reports posted on FTA Website titled "Handbook for Transit Safety and Security Certification," "Standard Protocols for Managing Security Incidents Involving Surface Transit Vehicles," and "Public Transportation System Security and Emergency Preparedness Planning." URL [http://transit-safety.volpe.dot.gov/]

Safety and Security Technical Support
Project VA-26-7027.01
FY 2002 Funding: $200,000 Schedule: September 2002 – September 2003
Performer: Booz. Allen and Hamilton, Inc.
8283 Greensboro Drive, Third Floor, McLean, Virginia 22101
Investigator: Nicholas J. Bahr Phone: 703.902.5116 Fax: 703.902.3617
FTA Project Monitor: Rhonda Crawley, TRI Phone: 202.366.4035 Fax: 202.366.3765
Email [rhonda.crawley@fta.dot.gov]

Objective. To work toward the elimination of transit-related deaths, injuries, property damage and the improvement of personal security and property protection.

Description. The FTA Safety and Security Technology Program places special emphasis on the evaluation and deployment of state-of the-art technologies and other innovative enhancements that promote public health and transit safety. This technical assistance project provides the resources necessary to encourage transit professionals in developing an awareness and a culture of technology transfer, foster and disseminate research results and best practices associated with proven safety and security technologies. Promotional material is intended to energize the industry in the deployment of proven safety and security technologies, such as the application of four quadrant highway-rail grade crossing gates integrated into a vehicle detection system. Four quadrant highway-rail grade crossing technology has been successfully demonstrated to enhance safety at light rail grade crossings.

Results Expected. Promotional material to encourage transit professionals in developing an awareness and a culture of technology transfer, and to actively foster and disseminate research results and best practices associated with proven safety and security technologies.

Safety and Security Technology Transfer Support
Project VA-26-5020
FY 2002 Funding: $199,736 Schedule: October 2002 – September 2003
Performer: Booz Allen & Hamilton
8283 Greensboro Drive, McLean, Virginia 22101
Investigator: Nicholas J. Barr Phone: 202.902.5116 Fax: 202.902.3617
FTA Project Monitor: Rhonda Crawley, TRI Phone: 202.366.4035 Fax: 202.366.3765
Email [rhonda.crawley@fta.dot.gov]

Objective. To emphasize mainstreaming state-of-the-art technologies and other innovative enhancements that promote public health and transit safety.

Description. The Safety and Security Technology Program places special emphasis on the evaluation and deployment of state-of-the-art technologies and other innovative enhancements that promote public health and transit safety as well as increase transit ridership. The purpose of this activity is to encourage the acceleration of technology transfer and to actively foster and disseminate research findings and best practices to transit stakeholders. Special emphasis is placed on mainstreaming state-of-the-art technologies and other innovative enhancements that promote public health and transit safety, as well as increase transit ridership. Project activities will further the deployment of safety and security technologies to transit agencies.

Results Expected. Technology transfer and outreach activities to further the deployment of safety and security technologies to transit agencies, promoting public health and transit safety and increasing transit ridership.

Safety Consciousness Planning Training Program
Project NJ-26-5002
FY 2002 Funding: $160,000 Schedule: October 2002 – June 2003
Performer: National Transit Institute
120 Albany Street, New Brunswick, New Jersey 08901-2163
Investigator: Richard J. Lee Phone: 732.932.1700 Fax: 732.932.1707
FTA Project Manager: Michael Taborn, TSS Phone: 202.366.0191 Fax: 202.366.7951
Email [Michael.taborn@fta.dot.gov] *Email [rjlee@NTI.rutgers.edu]*

Objective. To develop a training program to integrate safety as a key planning factor and performance measure for all transportation plans and programs.

Description. The National Transit Institute will develop, deliver, and continue to update a training program on the subject *Safety Conscious Planning*. This 16-hour training program on Safety Conscious Planning is designed for transportation planners and safety professionals in agencies at the state, regional, and local levels. TEA-21 requires that "each statewide and metropolitan planning process shall provide for consideration of projects and strategies that will increase the safety and security of the transportation systems for motorized and non-motorized users."

Results Expected. Development of the Safety Conscious Planning Course in September 2003. Results will benefit transportation planning professionals working with or in metropolitan planning organizations, state DOTs, FTA, FHWA, local planning organizations, and transit agencies.

Security System Guidelines - Access Management and Credentialing
Project MA-26-7080
FY 2000 Funding: $250,000 Schedule: November 2002 – October 2003
Performer: Volpe National Transportation Systems Center
Research and Special Programs Administration
55 Broadway, Kendall Square, Cambridge, Massachusetts 02142
Investigator: Matthew Rabkin Phone: 617.494.2151 Fax: 617.494.2984
FTA Project Manager: Sean Ricketson, TRI Phone: 202.366.4209 Fax: 202.366.3765
Email [sean.ricketson@fta.dot.gov] *Email [matthew.rabkin@volpe.dot.gov]*

Objective. To create and manage a transit complement to the Transportation Security Administration's Transportation Worker Identification Credential (TWIC) Program.

Description. This project will develop security guidelines for transit access management and will facilitate a working group/forum with the transit industry to ensure transit needs are met with regard to the Transportation Security Administration's credentialing program. The project will also help create a cohesive network of transit professionals familiar with the TWIC Program who could participate in advisory groups during subsequent stages of TWIC pilots and implementations.

Results Expected. Two documents—"Access Management Guidelines for Transit," and "Access Control of Architecture and Engineering Documents." These guidelines will be incorporated into an overall Model Transit Security Systems Design Guidelines Handbook with other chapters covering—buses, infrastructure, credentialing, communications, access management, and system integration.

Security System Guidelines - Bus Vehicles
Project MA-26-7084
FY 2002 Funding: $150,000 Schedule: November 2002 - November 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Matthew Rabkin Phone: 617.494.2151 Fax: 617.494.3260
FTA Project Monitor: Marcel Belanger, TRI Phone: 202.366.0725 Fax: 202.366.3765
Email [marcel.belanger@fta.dot.gov]

Objective. To develop design guidelines for bus vehicles that a transit agency may incorporate into its operations and future purchasing decisions to strengthen security.

Description. The Volpe Center, in cooperation with bus operators and manufacturers, will identify bus vehicle characteristics that can be modified to improve security for riders and employees. Bus vehicle elements under review include passenger and mechanical

compartment access control, driver isolation, fuel system security, emergency egress, and others. Transit operators will provide the industry review and comments for this project.

Results Expected. Design guidelines for future bus vehicle procurements. These guidelines will be incorporated into an overall Model Transit Security Systems Design Guidelines Handbook including chapters that cover bus vehicles, rail vehicles, infrastructure, credentialing, communications, access management, and system integration.

Security System Guidelines - Rail Vehicles
Project MA-26-7085
FY 2002 Funding: $150,000 Schedule: November 2002 – November 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Matthew Rabkin Phone: 617.494.2151 Fax: 617.494.3260
FTA Project Monitor: Jeffrey Mora, TRI Phone: 202.366. 0215 Fax: 202.366.3765
Email [Jeffrey.mora@fta.dot.gov]

Objective. To develop guidelines for rapid and light rail transit vehicles that a transit agency may incorporate into its operations and future purchasing decisions to strengthen security.

Description. The Volpe Center, in cooperation with rail transit system operators, will identify rail vehicle characteristics that can be modified to improve security for riders and employees. Railcar elements under review include passenger compartment-train operator intercom system, door opening system, equipment box, and other railcar elements. Transit operators will provide the industry review and comments for this project.

Results Expected. Design guidelines for future rail vehicle procurements. These guidelines will be incorporated into an overall Model Transit Security Systems Design Guidelines Handbook with other chapters covering—bus vehicle, rail vehicle, infrastructure, credentialing, communications, access management, and system integration.

State Safety Oversight Compliance
Project MA-90-5011
FY 2002 Funding: $1,100,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: James A. Harrison Phone: 617.494.3450 Fax: 617.494.2902
FTA Project Monitor: Roy Field, TPM Phone: 202.366.0197 Fax: 202.366.7951
Email [roy.field@fta.dot.gov]

Objective. To support the FTA State Safety Oversight Rule (49 CFR Part 659), requiring oversight of all rail transit agencies in revenue operation after January 1, 1997, and state oversight of rail transit systems within their jurisdiction to develop System Safety Program Plans.

Description. Federal statute requires the FTA to assess State Safety Oversight (SSO) Agencies. Oversight agencies require Rail Fixed Guideway Systems to develop and implement System Safety and Security Program Plans that conform to their System Safety and Security Program Standard (SSSPS). This project provides ongoing support for implementation of 49 CFR Part 659, State Safety Oversight for Rail Fixed Guideway Systems, including documentation of activities performed by rail transit agencies to address safety and security issues. The project also provides for the refinement of the current audit process; continuation of field audits; documentation and technical information dissemination; and database development to track compliance and analysis activities. Under this activity, FTA provides outreach efforts to the states through the SSO Annual Meeting, an Annual Report, and training through the Transportation Safety Institute.

Results Expected. The program has grown from six state agencies in 1997 overseeing 12 rail transit systems to the current 22 agencies providing safety oversight of 36 rail transit systems. State Safety Oversight Program can be viewed online at Internet URL [http://www.transit-safety.volpe.dot.gov/safety/Oversight.asp].

Transit Safety and Security Statistics
Project MA-26-5016
FY 2002 Funding: $400,000 Schedule: October 2002 - September 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: James A. Harrison Phone: 617.494.3450 Fax: 617.494.2902
FTA Project Monitor: Amy Jernigan, TPM Phone: 202.366.6475 Fax: 202.366.7951
Email [amy.Jernigan@fta.dot.gov]

Objective. To collect and analyze Transit Safety and Security Statistics on a national level.

Description. This project provides ongoing support for the maintenance, operation, and evolution of the Transit Safety and Security Statistics program (formerly the Safety Management Information System/SAMIS)—a mandatory reporting requirement of the FTA National Transit Database. It also supports the annual publication of the Transit Statistics report, which analyzes and displays normalized and trend data along with basic statistical data. The data is used in FTA decisions relating to the conduct of security audits and state oversight audits in reports to Congress, the Office of the Secretary, and the Office of Management and Budget; and in assisting transit professionals in the development of system safety and security plans. In FY 2002, the statistics report was reviewed and modifications were made to better define transit related safety and security issues and to improve data timeliness and accuracy. In response to the National Transportation Safety Board recommendations, a stand alone effort focused on the causal data transit systems collect and how the data can be used to prevent future accidents. The collection and analysis of safety and security data provides both the agency and the industry with a basis for identifying key safety and security problems.

Results Expected. Annual publication of the Transit Safety and Security Statistics Report. Data collection expanded to include highway-rail grade crossing accidents, cost data, and security data.

Transit Security Review Program
Project CA-90-5004
FY 2002 Funding: $455,000 Schedule: October 2002 - October 2003
Performer: Aegir Systems, 2002 North Solar Drive, Suite 175
Oxnard, California 93030-2651
Investigator: Jim Shean Phone: 805.485.4888 Fax: 805.485.4235
FTA Project Monitor: Carole Ferguson, TPM Phone: 202.366.0219 Fax: 202.366.7951
Email [carole.Ferguson@fta.dot.gov]

Objective. To conduct voluntary systematic reviews of existing security practices of public transit agencies to reduce their vulnerability to intentional harm to the system, employees, and users.

Description. Crime prevention is primarily a local responsibility, regardless of whether the crime occurs in the street or on a transit system. The FTA role is to provide capital and technical assistance and training to transit agencies in support of mitigating crime. Until recently, FTA exercised limited security oversight through Triennial Reviews of local transit agency operations and contractor supported project management oversight of large construction and rehabilitation projects. Under this ongoing program, voluntary systematic reviews are conducted to assess existing security practices of public transit agencies. Transit security audits are conducted to reduce the vulnerability of transit systems, including intentional harm to the system, employees, and users. FTA invites requests from transit agencies for onsite reviews of security measures and problems. In FY 1999, the audit was expanded to include participation by bus transit systems. These reviews utilize the systems approach in order to enable FTA to assist transit systems that manifest serious adverse security trends.

Results Expected. Ten transit security audits were conducted at small and medium transit agencies, expected to reduce the vulnerability of transit systems. Final reports issued to each transit agency indicating security findings and recommending solutions.

Transportation Safety Institute Safety and Security Training
Project OK-26-5003.01 Schedule: October 2002 – September 2003
Performer: Transportation Safety Institute
6500 South MacArthur Boulevard, Oklahoma City, Oklahoma 73125
Investigator: James Lopez Phone: 405.954.3582 Fax: 405.954.0367
FTA Project Manager: Vicki Bellet, TPM Phone: 202.366.0191 Fax: 202.366.7951
Email [Vicki.bellet@fta.dot.gov]

Objective. To reduce the number of casualties and accidents, and elevate the level of security awareness.

Description. Under this interagency agreement, the Transportation Safety Institute (TSI) will conduct safety and security courses and seminars for the transit industry. Training is designed to improve operational safety and security of transit systems and promote personal security of traveling public and transit employees. The courses to be conducted include one or more sessions of each of the following, depending on the demand: Bus Collision and Prevention and Prevention Investigation Seminar, Fundamentals of Bus Collision Investigation, Intermediate Problems in Bus Collision Investigation, Instructors Course in Bus Collision Investigation, Transit Bus System Safety, Bus Collision and Casualty Seminar, Instructors Course in Bus Operator Training; Safety Evaluations of Alternative Fuel Facilities and Equipment, Instructors Course in Alternative Fuels Safety, and Emergency Response and Access to Alternative Fueled Vehicles; Transit Rail Incident Investigation, and Transit Rail System Safety; Transit System Safety, Fatigue Awareness Seminars, Instructors Course in Fatigue Awareness for Employees, Substance Abuse Management and Program Compliance, and Transit Industrial Safety Management; and Transit System Security, Effectively Managing Transit Emergencies, Transit Explosives Incident Management Seminar, Response to Weapons of Mass Destruction, Crime Prevention Through Environmental Design, Threat Management and Emergency Response to Bus Hijackings Seminar, and Threat Management and Emergency Response to Rail Hijackings Seminar.

Results Expected. Training provided to the industry included over 62 classes and 20 seminars, attended by more than 4200 students. Final report due in October 2003, that will identify transit agencies that took this training and how they viewed its effectiveness.

GOAL: Reduce life-cycle costs; accelerate introduction of low-emissions, high-efficiency vehicles; and improve rail technologies and infrastructure management.

Altoona Bus Testing Program
Project PA-03-7002.02
Funding: $3,000,000 Schedule: October 2002 - October 2003
Performer: Pennsylvania Transportation Institute
The Pennsylvania State University, Research Office Building
University Park, Pennsylvania 16802-4710
Investigator: Bohdan T. Kulakowski Phone: 814.865.1891 Fax: 814.865.3039
FTA Project Monitor: Marcel Belanger, TRI Phone: 202.366.0725 Fax: 202.366.3765
Email [marcel.belanger@fta.dot.gov]

Objective. To promote production of better transit vehicles and components, and to ensure that transit customers purchase safe vehicles able to withstand the rigors of transit service. To carry out bus testing requirements—Federal law specifies that no new bus model may be acquired, using federal funds, unless it has been tested at the bus testing facility.

Description. Under this project, Bus Testing requirements will be carried out as defined in FTA's Bus Testing Regulation (49 CFR Part 665). The FTA New Model Bus Testing Program aims to ensure that deficiencies in new bus models are identified, and in many cases corrected, before the vehicles enter revenue service, potentially saving transit agencies and taxpayers millions of dollars over the life of each bus model. The Bus Testing Program is operated under a cooperative agreement with FTA by the Pennsylvania Transportation Institute (PTI) of the Pennsylvania State University. FTA funds 80 percent of the testing fee, while manufacturers are responsible for the remaining 20 percent. Most of the tests are performed at the Altoona Bus Testing and Research Center in Altoona, Pennsylvania, which currently handles up to eight buses at one time. However, the durability test is conducted at a purpose-built test track located in State College Pennsylvania. Currently, the Bus Testing Program tests buses for safety, structural integrity, performance, maintainability, noise, and fuel economy. Emissions and brake tests are also under development. Test results are compiled in a comprehensive report available to the industry and the public. PTI and FTA are also developing an Internet-accessible database of Bus Testing information that will offer users the ability to search, filter, and compare data from multiple tests. A Congressionally Directed Project. Website URL [http://www.altoonabustest.com].

Results Expected. By continuing to identify design problems before buses are placed in service, many costly fleet failures and safety problems have been and will continue to be averted. Since the first bus was tested in January 1990, more than 5,800 malfunctions have been reported; 32 of these could have potentially caused serious or fatal injuries or significant property damage if they had occurred in service.

Alternative Fuels Safety and Advanced Bus Technology Support
Project MA-26-7071.03
FY 2002 Funding: $200,000 Schedule: October 2002 – December 2003

Performer: Volpe National Transportation Systems Center
55 Broadway, Cambridge, Massachusetts 02142
Investigator: William Chernicoff Phone: 617.494.2756 Fax: 617.494.2961
FTA Project Monitor: Jeffrey Mora Phone: 202.366.0215 Fax: 202.366.3765
Email [jeffrey.mora@fta.dot.gov]

Objective. To support FTA activities, including—industry standards and guidance document development, advanced technology bus development programs, and alternative fuels safety in transit.

Description. This continuing effort assists the FTA in conducting needed research to provide information for standards development activities; development of new technical guidance documents for the transit industry; update technical guidance documents on alternative fuels and conduct special research studies on issues related to alternative fuel use in transit; provide technical support on the Fuel Cell and Zinc-Air Bus technology development projects; and provide general technical support to the FTA Office of Technology in the area of alternative fuel use in transit and advanced bus technologies. Technical support assists the agency in updating previously published technical guidance documents on alternative fuels, and participating in the interagency Hydrogen Task Force.

Results Expected. "Design Guidelines for Bus Transit Systems Using Electric and Hybrid Electric Propulsion as an Alternative Fuel," is the sixth in the Clean Air Program series of guidance reports to be published. Clean Air Program Online at Internet URL [http://transit-safety.volpe.dot.gov/Publications/]

Advanced Transportation Technology Institute
Project TN-26-7020
Funding: $500,000 Schedule: June 2002 – September 2004
Performer: Advanced Transportation Technology Institute (ATTI)
[Formerly the Electric Transit Vehicle Institute]
1617B Wilcox Boulevard, Chattanooga, Tennessee 37406
Investigator: John Powell, Executive Director Phone: 423.622.3884 Fax: 423.622.0744
FTA Project Monitor: Marcel Belanger, TRI Phone: 202.366.0725 Fax: 202.366.3765
Email [marcel.belanger@fta.dot.gov] Email [admin@atti-info.org]

Objective. To conduct an outreach program of technology transfer, technical assistance, and information sharing that supports FTA programs related to electric-drive vehicles and other clean fuel sources—harnessing and transferring research results and benefits to the transit industry and national parks more effectively.

Description. Ongoing efforts within FTA to advance fuel cells, alternative fuels, and electric-drive technologies provide the foundation for moving towards a cleaner and more efficient way of transporting the traveling public. The Advanced Transportation Technology Institute (ATTI) is a nonprofit organization conducting an outreach program supporting federal efforts to encourage technology transfer, technical assistance, and increased communication and dissemination of information on energy-efficient, low-emissions vehicle technologies in

transit applications. The project activity aims (1) to improve the industry's understanding of, interest in, and use of clean and efficient buses through the implementation of a coordinated information, technology transfer, and outreach program; (2) to provide professional and technical assistance to transit agencies and national parks in the commissioning and deployment of clean, efficient transit vehicles; and (3) to develop material and/or procedures that supports the clean, efficient transit vehicle industry. The U.S. Department of Transportation, through FTA, has a significant interest in the advancement of clean and efficient vehicle technology in transit applications and the national parks. Ongoing efforts within FTA to advance fuel cells, alternative fuels, and electric-drive technologies provide the foundation for moving towards a cleaner and more efficient way of transporting the traveling public. A Congressionally Directed Project. ATTI Website URL [http://www.atti-info.org/].

Results Expected. ATTI provided technology transfer services to transit systems in cities and locales across the nation including—Chattanooga, Louisville, Miami Beach, Norfolk, Mobile, Tempe, Indianapolis, Knoxville, Gatlinburg/Pigeon Forge, Metropolitan Atlanta, Boston, Yosemite National Park, Great Smoky Mountains National Park, and others—helping these organizations select clean efficient transit vehicles that matched their needs, understand how to operate them effectively, and implement effective maintenance practices. ATTI intends to document success stories, produce and distribute quarterly information newsletters, and maintain a website with links to relevant information.

Bus Axle-Weight Study Report to Congress
Project MA-26-7091
Funding: $125,000 Schedule: October 2003 – October 2004
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Scott B. Smith Phone: 617.494.2588 Fax: 617.494.3260
FTA Project Monitor: Quon Y. Kwan Phone: 202.366.6824 Fax: 202.366.3765
Email [quon.kwan@fta.dot.gov] *Email [smith@volpe.dot.gov]*

Objective. To study and submit to Congress, a report on the axle weight limits for over-the-road and transit buses, addressing damage to pavement caused by overweight buses and recommending options for reducing such damage. Requirement of the Senate Report, on the FY 2002 U.S. Department of Transportation Appropriations Act.

Description. To develop the report on axle weight limits for over-the-road and transit buses, the study will explore the following areas of research: axle weight limits, trends in weight of over-the-road and transit buses, and impacts of statutory and regulatory requirements (in particular, Clean Air Act and Americans with Disabilities Act) on bus weight. The research will also explore the following areas: lightweight materials for reducing weight of buses; market penetration of lightweight buses; consideration of weight and wear in vehicle design rulemaking; options for introducing lightweight buses; and a cost-benefit analysis of incentives for procuring lightweight buses versus pavement wear. A Congressionally Directed Project.

Results Expected. A Report to Congress on the Bus Axle Weight Study in November 2003.

Composite Materials Development for Transit Bus
Project AL-26-7001.02
FY 2002 Funding: $876,600 Schedule: April 2002 – September 2004
Performer: Southern Research Institute
PO Box 55305, 2000 Ninth Avenue South
Birmingham, Alabama 35355
Investigator: George Husman Phone: 205.581.2977 Fax: 205.581.2414
FTA Project Monitor: Quon Y. Kwan Phone: 202.366.6824 Fax: 202.366.3765
Email [Quon.Kwan@fta.dot.gov]

Objective. To develop and demonstrate lighter weight, lower cost, higher performing structures for transit buses and other mass transit applications, made from thermoplastic composite materials; and to determine whether the component (fabricated from thermoplastic composite materials) performs the same as, or better than, the conventional structural component it is intended to replace; costs less to manufacture, and weighs less than the existing component. Thermoplastic composite materials are environmentally-friendly and recyclable.

Description. The Southern Research Institute continues to conduct research to determine whether it is feasible to design and fabricate components for mass transit applications from thermoplastic composite materials. This includes developing long fiber thermoplastic composite materials and product forms, as well as fabrication methods for molding components from long fiber thermoplastic composite materials that can be used to reduce the cost and weight of components used in buses and other mass transit applications. During Phase 2 of the project, SRI fabricated a different component—bus floor panel—to demonstrate that long fiber thermoplastic composite materials can be used (1) for demanding applications, meeting the rigorous requirements for stiffness, load bearing, and longevity, and (2) for large-area applications such as floor panels on a transit bus. The research will document results of performance tests (for durability, impact resistance, and fire safety) and analyze impacts on costs (manufacturing and life cycle costs). Ultimately, the project will determine whether the fabricated component performs the same as, or better than, the conventional structural component it is intended to replace; costs less to manufacture, and weighs less than the existing component.

Results Expected. In 2002, the Phase 1 research successfully fabricated and demonstrated an integrated, **one-unit, two-passenger bus** seat made from long fiber thermoplastic composite material, that weighs 50 percent less than the conventional seat, and costs 40 percent less to manufacture in commercial quantities. The recyclable seat was designed according to the Standard Bus Procurement Guidelines (standard SAE J 826) and fabricated by compression molding. The two-passenger bus seat successfully passed the load tests and met requirements for flame spread and smoke density. Three separate *Center for Composites Manufacturing* reports for both components (two-passenger bus seat and the bus floor component) are available from [research@fta.dot.gov]: *(1) Final Report, (2) Component Report, and (3) Fabrication Guide.*

Intermodal Fuel Cell Bus Maintenance & Training Facility
Project DC-26-7130
FY 2002 Funding: $4,803,000 Schedule: September 2002 – September 2003
Performer: Georgetown University
3700 O Street, NW, Washington, DC 20057
Investigator: Donald Phillip Phone: 202.687.7602 Fax: 202.687.5523
FTA Project Monitor: Mary Anderson, TRI Phone: 202.366. 0222 Fax: 202.366.3765
Email [mary.Anderson@fta.dot.gov] Email [phillipd@gunet.georgetown.edu]

Objective. To continue the design and construction of a 163,200 square foot Intermodal Fuel Cell Bus Maintenance & Training Facility to support a commercially viable domestic Fuel Cell Transit Bus and serve as a prototype training and maintenance facility for the transit industry. Fuel cell is one of the most promising clean energy technologies of the 21st century—environmentally friendly, reliable, quiet, and highly efficient power system.

Description. The Intermodal Fuel Cell Transit Bus Maintenance & Training Facility at the Georgetown University campus parking garage is approximately 94 percent complete. It is expected to be substantially completed in July 2003. The facility will provide monitoring and scheduled maintenance services for a phosphoric acid fuel cell transit bus, built under the FTA Fuel Cell Transit Bus Program. Six full-size, 50-foot maintenance bays for fuel cell buses will be built equipped with lubrication system, parts cleaning area, and diagnostic safety equipment (75 percent complete). Once constructed, the facility will house two Georgetown University fuel cell buses, serve as a training and maintenance facility for transit operators, and provide a national model for fuel cell transit bus operation and maintenance.

The FTA Fuel Cell Transit Bus Program is a multi-year project that supports Georgetown University's research program for the development and production of a domestically produced fuel cell propulsion system for transit buses. When completed, the program will provide FTA with the preliminary engineering and development activities necessary for the domestic production of a commercially viable fuel cell powered, full-sized transit bus. The GU Website URL. [http://fuelcellbus.georgetown.edu/]

Results Expected. The Fuel Cell Bus Maintenance & Training Facility is expected to be complete and operational in the Fall of 2003. It will be used to support a commercially viable domestic Fuel Cell Transit Bus; and serve as a prototype training and maintenance facility, available to other transit industry bus mechanics for developing skills in the maintenance of the Phosphoric Acid Fuel Cell Bus.

Electric Drive for Fuel Cell & Hybrid Electric Buses: EVermont Station Car/Shared Car Demonstration
Project VT-26-7033.01
FY 2002 Funding: $498,900 Schedule: March 2002 – October 2003
Performer: EVermont
103 South Main St, Waterbury, Vermont 05671
Investigator: Erin Russell Phone: 805.568.0985 Fax: 805.962.4794

FTA Project Monitor: Shang Hsiung, TRI Phone: 202.366.0241 Fax: 202.366.3765
Email [shang.hsiung@fta.dot.gov]

Objective. To demonstrate electric vehicle technology under cold weather conditions and continue to demonstrate the station car concept – the cleanest car in Vermont.

Description. The effort includes the demonstration of ten to twenty electric vehicles in transit-related applications with qualifying public entities and Vermont citizens. The vehicles will test, demonstrate and advance the cold-weather transit use of light-duty vehicles. This project effort will also assess the utility of testing, demonstrating and advancing the cold-weather use of advanced, multi-port rapid chargers. The vehicles will be used in groups of 3 - 5 per location (also called pods) for shared car and station car applications. A complete maintenance plan will be prepared. Service plans and service personnel and technical training will be negotiated before delivery. Spare part procurement procedures will be carefully reviewed. A plan for towing and use of a replacement car in case of breakdown will be developed. A Congressionally Directed Project.

Results Expected. Demonstrate and evaluate electric drive technology and the station car concept under cold weather conditions. The outcome focuses on providing additional information on the operation of electric vehicle drive technology for hybrid electric and fuel cell transit buses that addresses a critical need to the successful commercialization of these vehicle technologies. Internet URL [http://www.evermont.org/index-old.htm]

Energy Storage for Fuel Cell & Hybrid Electric Buses: Flywheel Project
Project CA-26-7033
FY 2002 Funding: $980,000 Schedule: August 2002 - December 2003
Performer: WestStart-CALSTART (WestStart)
2181 East Foothill Blvd, Pasadena, California 91107
Investigator: John Boesel Phone: 616.744.5600 Fax: 616.744.5610
FTA Project Monitor: Shang Hsiung, TRI Phone:202.366.0241 Fax: 202.366.3765
Email [shang.hsiung@fta.dot.gov]

Objective: To design and develop a compact, lightweight and reliable energy storage for hybrid electric and fuel cell transit buses.

Description. This effort is designed to improve the flywheel motor generator's (FMG) robustness and ruggedness, as a first step in the transition of this promising power management technology from stationary to mobile/transportation applications. WestStart will partner with AFS Trinity Power Corporation to execute the design and engineering work under this program. AFS Trinity is in the business of developing and manufacturing Flywheel Power Systems for power management applications. That is, applications where the characteristic ride through time is in the range of a few to several tens of seconds. The power output of the system is high, while the energy storage is modest. These systems are in contrast to lead-acid batteries where the characteristic discharge time is several minutes or more, and where for short discharge only a very small fraction of the total available stored energy is available. The M3AM Flywheel Power System (presently in the pre-production

stage of development) delivers 0.42 kWh over 15 seconds, at a power of 100kW, with active magnetic bearings. The goal of the proposed work is to implement and demonstrate design features of the FMG to improve robustness and ruggedness. Under this contract, test articles will be designed, fabricated and tested. Work will start with the M3 class rotor under FY 2002 funding to advance the state of the art in the areas of dynamic variations in system response, touchdown bearing performance, and low loss systems. A Congressionally Directed Project.

Results Expected. The project intends to implement and demonstrate design features of the Flywheel Motor Generator to improve its robustness and ruggedness, transition this power management technology from stationary to mobile/transportation applications. The project outcome focuses on development of a prototype energy storage system for hybrid electric and fuel cell transit buses that addresses a critical need to the successful commercialization of these vehicle technologies.
Website URLs [http://www.weststart.org/] and [http://www.afstrinity.com/tech/tec_fmg.html]

Energy Storage for Fuel Cell & Hybrid Electric Buses: Nickel Hydrogen Battery
Project MA-26-7050.01
FY 2002 Funding: $1,600,000 Schedule: March 2002 – October 2003
Performer: Power Valley Transit Authority
2808 Main Street, Springfield, Massachusetts 01107
Investigator: Gary Shephard Phone: 413.732.6248 Fax: 413.737.2954
FTA Project Monitor: Shang Hsiung, TRI Phone: 202.366.0241 Fax: 202.366.3765
Email [shang.hsiung@fta.dot.gov]

Objective. To design and develop a compact, lightweight and reliable energy storage for hybrid electric and fuel cell transit buses.

Description. The effort includes the development, demonstration and evaluation of the application of an innovative, segmented nickel-hydrogen battery to hybrid electric transit buses. This project will demonstrate and evaluate the commercial viability of a technology that was initially developed under a Defense Advanced Research Projects Agency program and further refined under the Department's Advanced Vehicle Program. The technology includes a hydrogen storage unit separate from the electrochemical reaction that permits hydrogen to be stored in a solid state, bonded to a metal alloy. The hydrogen is drawn upon when needed (applying an electrical load to the battery) and is returned to the storage unit when the battery is charged from the engine generation of electricity or from electricity provided by regenerative braking. The separate storage avoids hydrid breakdown that shortens the life of the nickel metal hydride batteries. Unlike other fuel cell products, the ElectraStor System does not require a renewable source of hydrogen or the storage of gaseous or liquid hydrogen that necessitates a potentially dangerous large on board supply of hydrogen. All of the hydrogen needed for the life of the ElectraStor products is contained safely within the metal alloy included within the separate ElectraStor storage unit. A Congressionally Directed Project.

Results Expected. This project will result in the development, demonstration and evaluation of a pre-production prototype segmented nickel-hydrogen battery for hybrid electric and fuel cell vehicle applications. A preliminary "In-Vehicle Testing of Prototype Battery System Report" is due in December 2003. The project outcome focuses on development of a prototype energy storage system for hybrid electric and fuel cell transit buses that addresses a critical need to the successful commercialization of these vehicle technologies.
Website URLs [http://www.electrastor.com] and [http://www.pvta.com]

Energy Storage for Fuel Cell & Hybrid Electric Buses: Sodium Nickel Chloride Battery
Project CA-26-7027.01
FY 2002 Funding: $389,600 Schedule: March 2002 – October 2003
Performer: Santa Barbara Electric Transportation Institute
P.O. Box 957, Santa Barbara, California 93102
Investigator: Paul Griffith Phone: 805.568.0985 Fax: 805.962.4794
FTA Project Monitor: Shang Hsiung, TRI Phone: 202.366.0241 Fax: 202.366.3765
Email [shang.hsiung@fta.dot.gov]

Objective. To design and develop a compact, lightweight and reliable energy storage for hybrid electric and fuel cell transit buses.

Description. The effort includes development, demonstration and evaluation of a 30-foot low-floor electric transit bus with an advanced sodium nickel chloride battery. This bus contains an electric propulsion system with components selected and system integration conducted to maximize safety, performance, reliability, maintainability and life-cycle cost. SBETI will conduct the design and engineering of a transit ready, hybrid-electric propulsion system. Specific focus will be on the selection of compatible components with the environmental and physical demands of transit service. Detailed design and engineering will be conducted including the development of engineering drawings to the point that will enable actual fabrication of the hybrid system upon available funding. Performance and life cycle cost projections will be calculated and evaluated.

SBETI will prepare a Twelve-Year Report on electric bus operations at the Santa Barbara MTD. In May 1995, SBETI completed a Four-Year Report that provided comprehensive information on the successful operation of battery electric buses at Santa Barbara MTD. This report along with an eight-year update has been one of the only definitive studies conducted on battery-electric bus operations. It is viewed quite favorably with the transit and electric vehicle communities. This twelve year report will include coverage of new battery, fast charge, and propulsion system technologies that are of interest to the transit community, and will evaluate typical transit duty cycles and various electric bus deployment options (pure electric with over night charging, pure-electric with supplemental opportunity charging, and series hybrid electric drive). This report will provide useful information for transit agencies in their decision making process on alternative fueled transit buses. A Congressionally Directed Project.

Results Expected. This project will result in the development, demonstration and evaluation of a pre-production prototype sodium nickel chloride battery electric transit bus and the

design for a hybrid electric transit bus using that battery technology and electric drive system. The final outcome focuses on development of a prototype energy storage system for hybrid electric and fuel cell transit buses that addresses a critical need to the successful commercialization of these vehicle technologies. A Twelve-Year Report on electric bus operations at the Santa Barbara Metropolitan Transportation District will be published. Website URLs [http://www.sbeti.com] and [http://www.betard.co.uk]

Small Transit Bus for National Park and Federal Lands
Project ID-26-7002
FY 2002 Funding: $150,000 Schedule: Phase I. December 2002 – December 2003
Performer: U.S. Department of Energy, Idaho Operations Office (DOE)
850 Energy Drive, Idaho Falls, Idaho 83402
Investigator: Mike Anderson Phone: 208.526.9385 Fax: 208.526.0982
FTA Project Monitor: Christina Gikakis, TRI Phone: 202.366.8680 Fax: 202.366.3765
Email [Christina.gikakis@fta.dot.gov]

Objective. To develop with partners a low-floor, low-emissions, and cost-effective prototype vehicle for application in the national park transit system, that can serve as a potential platform for a low-floor community transit vehicle.

Description. Consistent with FTA objectives to foster federal lands transit technology transfer, FTA is providing funding support to an industry/government collaborative effort to develop a low-floor, low-emissions, and cost-effective prototype vehicle for application in national park transit systems. The vehicle platform is also very promising for use as a low-floor community transit vehicle. The project team will develop a small (approximately 26-feet long) prototype low-floor, natural gas powered small bus based on the GMT 560 platform that can accommodate tracks, and is suitable for use in transit and in the national parks. The vehicle will undergo rigorous testing and demonstration drives. The project team will also develop a report on the ability of the prototype vehicle to meet new HHS/NHTSA rules for community transit vehicle ("school activity bus" rule). The overall project is structured to leverage the federal investment with significant industry cost share. Project participants include the DOE, Department of the Interior, National Park Service, Idaho National Engineering and Environmental Laboratory, Yellowstone National Park, ASG Renaissance, Arboc Ltd, Champion Bus, and General Motors. A Congressionally Directed Project.

Results Expected. A prototype vehicle that can lead to a commercially-viable low-floor bus with better reliability, improved ride quality, and lower emissions than current low-floor small buses. Project activities include field testing and evaluation, as well as assessment of vehicle and chassis for use as community transit vehicle; and a project final report.

Zinc-Air Battery Bus Demonstration Project – Phase 3
Project NV-26-7001.02
FY 2002 Funding: $1,012,791 Schedule: October 2002 – December 2003
Performer: Electric Fuel Corporation
632 Braodway, Suite 301, New York, New York 10012
Investigator: Yoel Gilon Phone: 972.539.8680 Fax: 972.355.1168

FTA Project Monitor: Christina Gikakis, TRI Phone: 202.366.8680 Fax: 202.366.3765
Email [Christina.gikakis@fta.dot.gov]

Objective. To evaluate and demonstrate the feasibility of ultracapacitor/zinc-air battery technology for transit buses, and evaluate advanced technologies for electric drive systems.

Description. The Zinc-Air Battery Bus Demonstration Program is an ongoing multi-phase effort to demonstrate the proof-of-concept of zinc-air battery technology for a 40-foot transit bus. Zinc-air battery technology offers a high-energy, cost-effective energy source as a viable alternative to existing lead-acid batteries, as well as longer vehicle performance range.

In Phase 3 of the project, the all electric propulsion system developed in Phases 1 and 2 will continue to be enhanced and optimized, and will undergo additional testing and evaluation. A real world demonstration and peer review meeting are among the last tasks of Phase 3 of the zinc-air all electric transit bus program. Under Phase 1 of the program, initiated in 1998, an all-electric zinc-air battery propulsion system was integrated onto an existing 40-foot transit bus and tested. The Phase 2 effort focused on conducting evaluations of the system and vehicle performance, including track testing and limited on-road demonstrations; and upgrading the electric drivetrain and controls. Phase 3 activities include installation of new advanced ultracapacitors and optimization of the electric propulsion system configuration, installation and implementation of an improved control system for various electrically operated bus auxiliaries. The bus will undergo continued performance testing on a closed track based transit bus CBD cycle. Results of the Phase 3 testing will be compared to Phase 1 and Phase 2 performance test results. The bus will also undergo a limited on-road non-revenue demonstration in conjunction with a transit agency. A Congressionally Directed Project.

Results Expected. Further the development and testing of advanced technologies for electric drives vehicles, including an ultracapacitor that provides an energy storage system that is compact, lightweight, and critical for improved hybrid bus performance. This project is part of FTA's electric and hybrid electric vehicle effort to foster development and deployment of electric drive propulsion systems that can be used in a wide range of transit applications to improve air quality, reduce greenhouse gas emissions, and reduce the transportation sector's consumption of petroleum.

Rail Technology & Systems

The FTA *Low-Speed Magnetic Levitation Research and Development Program*, also called the *Urban Maglev Program*, is a cost-share program in which the development team provides 20 percent in non-federal matching funds. Project funded under the *Urban Maglev Program* are undertaken in three discrete phases: Evaluation of Proposed System Concept, Prototype Subsystems Development, and System Integration and Deployment Planning.

Maglev is a revolutionary approach in which transit vehicles/trains are supported by magnetic forces without any contact between the wheels and rail surfaces.

Low-Speed Urban Maglev Technology Development Program
Project CA-26-7025.02
FY 2002 Funding: $4,000,000 Schedule: October 2002 – September 2003
Performer: General Atomics Corporation
3550 General Atomics Court, San Diego, California 92121
Investigator: Sam Gurol Phone: 858.455.4113 Fax: 858.455.4341
FTA Project Monitor: Venkat Pindiprolu, TRI Phone: 202.366.8061 Fax: 202.366.3765
Email [venkat.pindiprolu@fta.dot.gov] [sam.gurol.@gat.com]

Objective. To develop magnetic levitation technology that offers a cost effective, reliable, and environmentally friendly transit option for urban mass transportation in the United States, required under Section 3015 (c) of the Transportation Equity Act for the 21st Century (TEA-21).

Description. This project supports the efforts of General Atomics (GA) to develop low-speed magnetic levitation (Maglev) technology. GA is leading a team of experts to develop low speed magnetic levitation technology solution to urban and regional transportation problems, for initial application in the Pittsburgh, Pennsylvania area. The Low-Speed Urban Maglev Technology Project involves an entirely passive, permanent magnetic levitation system, with an efficient linear synchronous motor powering the guideway to provide propulsion. The system represents refinements that evolved from the Maglev technologies developed by the United States, Germany, Japan, and Korea over the last three decades. This project supports development of magnetic levitation technologies to demonstrate energy efficiency, congestion mitigation and safety benefits. The Urban Maglev Program was initiated through a January 29, 1999 Federal Register Notice, to carry out this project and similar low speed maglev projects created under TEA-21 and titled the *Low Speed Project.* The General Atomics project is the first award under the FTA Urban Maglev Program. See Website at URL [http://faculty.washington.edu/jbs/itrans/urbmaglev.htm].

Results Expected. The GA project is expected to move into Phase 2 in 2003. To date, GA team completed Critical Prototype Component Design, civil work on test track, and installed Chassis and First Guideway Module. "Low Speed Maglev Technology Development Program" report, published in March 2002. This Urban Maglev system offers many benefits, including the ability to operate in challenging terrain with steep grades and tight turns, all-weather operation, low maintenance, and rapid acceleration.

MagneMotion Urban Maglev Program
Project MA-26-7077
FY 2002 Funding: $506,880 Schedule: October 2002 – September 2003
Performer: MagneMotion Inc., 20 Sudbury Road
Acton, Massachusetts 01720
Investigator: Richard Thornton Phone: 978.461.5090 Fax: 978.461.5088
FTA Project Monitor: Venkat Pindiprolu, TRI Phone: 202.366.8061 Fax: 202.366.3765
Email [venkat.pindiprolu@fta.dot.gov]

Objective. To develop magnetic levitation technology that offers a cost effective, reliable, and environmentally friendly transit option for urban mass transportation in the United States

Description. MagneMotion, a provider of transportation and automation solutions based on linear motor propulsion and position sensing technologies, will conduct research under the FTA Urban Maglev Program. MagneMotion's advanced technology is scalable and adaptable to a wide range of applications, and can be integrated into the design of new systems or used to augment and improve existing systems. Under this project MagneMotion will lead the development of a key Maglev technology for future implementation in transportation systems serving traffic-congested urban areas. A key element of the MagneMotion Urban Maglev system is the use of bus-size vehicles that can operate with short headways under automatic control. This research purports to examine the feasibility of a wide-gap electromagnetic suspension (attractive force) technology, perform a proof-of-concept of an experimental prototype of that technology, identify potential transit markets, and deliver a final report to the FTA summarizing project performance and results.

Results Expected. Design and partial testing of major subsystems, and Final report.

Rail Systems Standards and Best Practices, Phase 2
Project No. DC-26-7124.01
FY 2002 Funding: $200,000 Schedule: October 2002 – December 2003
Performer: American Public Transportation Association
1666 K Street NW, Washington, DC 20006
Investigator: Tom Peacock Phone: 202.366.4805 Fax: 202.496.4335
FTA Project Monitor: Jeffrey Mora Phone: 202.366.0215 Fax: 202366.3765
Email [jeffrey.mora@fta.dot.gov]

Objective. To support the American Public Transportation Association (APTA) effort to further develop and implement rail system standards and best practices that will improve system safety, reliability and achieve cost efficiency.

Description: Under Phase 2 of the project, APTA will continue to work with the Institute of Electrical and Electronic Engineers (IEEE) to develop and ballot rail transit vehicle electrical interface standards. Other task forces may be established by APTA to prepare relevant industry standards or best practices under the Rail Standards Project Bylaws.

Fleet Operations – ITS Transit Projects

Goal: Increase efficiency, average speed, and throughput of transit fleets.

Advanced Public Transportation Systems - APTS

Advanced Public Transportation Systems – APTS Technical Support
Project MA-26-7087
FY 2002 Funding: $200,000 Schedule: September 2002 – September 2005
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Robert Ow Phone: 617.494.2411 Fax: 617.494.3670
FTA Project Monitor: Sean Ricketson, TRI Phone: 202.366.6678 Fax: 202.366.3765
Email [sean.ricketson@fta.dot.gov]

Objective. To provide continuing technical support to the FTA Advanced Public Transportation Systems (APTS) Program—the transit component of the Department's Intelligent Transportation Systems (ITS) Initiative.

Description. The APTS program is designed to encourage development and deployment of innovative technologies and strategies to improve all aspects of public transportation and ridership, using smart ITS technologies. APTS, also called Transit ITS, offers low-cost technology-based solutions to the challenges confronting the nation's public transportation systems. APTS incorporates state-of-the-art computer, telecommunications, and navigation technologies to improve the service and safety of public transit. Under this project, technical support covers development and management of several projects, including: Transit Intelligent Vehicle Initiative (IVI) and System Integration Testing; Smartcard Guidelines Update; ITS Standards Development; Transitweb Maintenance; and FTA Technical Staff Support. Technical staff support activities will include reviewing, analyzing and coordinating information in support of the APTS program, as well as updating reference material on the deployment and state-of-the-art in Transit ITS technology. Project is funded under the DOT National ITS Program.

Results Expected. Products and services delivered under this program assist transit agencies in the planning, procurement, and implementation of ITS Transit technologies.

Advanced Traveler Information Systems Human Factors
Project OH-26-7015
FY 2002 Funding: $300,000 Schedule: April 2002 – September 2003
Performer: Battelle Memorial Institute, Columbus Laboratories
505 King Avenue, Columbus, Ohio 43201
Investigator: Chris Cluett Phone: 206.528.3333 Fax: 206.528.3552
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To determine customer preferences for the display of traveler information.

Description: One of the most widely implemented ITS technologies in public transit today is the traveler information system. This series of workshops in four cities in the United States is

designed to obtain customer input related to the delivery and operation of advanced traveler information systems (ATIS). Workshops will be conducted to query transit riders about their preferences and expectations regarding traveler information services. The research will focus on the format and method of receipt of real-time and incident related information. The result will be a guide related to human factors concerns on implementation of transit traveler information systems. Project is funded under the DOT National ITS Program.

Results Expected. The project will develop a research document, illustrating customer preferences for traveler information service and providing recommended practices information useful to the transit industry.

Autonomous Dial-A-Ride Transit Project – In Vehicle Dispatch
Project TX-26-7010.01
FY 2002 Funding: $793,615 Schedule: June 2002 – December 2003
Performer: Corpus Christi Regional Transit Authority
812 Alameda, Corpus Christi, Texas 78401 – 2933
Investigator: Linda Watson Phone: 361.289.2712 Fax: 361.289.3056
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To develop and deploy an automated demand respond transit system that will improve the overall cost effectiveness and efficiency of demand response transit.

Description. Currently under development is a demand responsive operations system that virtually eliminates the role of the dispatcher in paratransit service – the autonomous dial-a-ride transit (ADART) system The Corpus Christi Regional Transportation Authority (RTA) is nearing completion of this revolutionary in-vehicle and fully automated demand response transit system. This is the second earmark for the project. It will integrate the ADART system with the communications, vehicle location, fare payment, and traveler information systems currently operated by the RTA. This effort builds on a previously funded feasibility study and prototype implementation and test of two vehicles, using the advanced route scheduling and dispatch system. FY 2002 funding provides additional integration support to allow the system to go operational with up to 10 vehicles. Total funding to date for the integration is $1,731,115 in federal funds. Currently ADART is undergoing technical reviews. Project is funded under the DOT National ITS Program.

Results Expected. A successful ADART system deployment will allow the transit industry to revisit demand response transit operations, and develop a lower cost solution to increase transit ridership.

Bus Rapid Transit IVI Lane Assist Technology Requirements
Project MN-26-7003.01
FY 2002 Funding: $182,164 Schedule: June 2002 – March 2003
Performer: Metropolitan Council of Governments
560 Sixth Avenue, North, Minneapolis, Minnesota 55411-4398
Investigator: Steve McLaird Phone: 612.349.7312 Fax: 612.349.7316

FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To identify requirements for the deployment of lane assist technologies on transit vehicles.

Description. This Intelligent Vehicle Initiative (IVI) project continues the FY 2001 effort to research bus rapid transit (BRT) system requirements for lane assistance technology that support transit operations in unique environments, such as narrow lanes. The technology stems from research on intelligent vehicles and automated highway systems. This project will develop a set of guidelines based on the BRT community needs, the technology currently available, and the human factors requirements for safe implementation of these systems. The FY 2002 funding is the second part of an overall $400,000 program. Project is funded under the DOT National ITS Program.

Results Expected. Lane assist technology increases the safety of transit vehicles operating in narrow lanes, high-occupancy-vehicle lanes, and bus shoulder lanes, and allows the vehicle to operate at higher operating speeds.

Bus Rapid Transit IVI Lane Assist Technology Requirements
Project FL-26-7024
FY 2002 Funding: $50,000 Schedule: April 2002 – July 2003
Performer: LYNX/Central Florida Regional Transit Authority
445 W. Amelia Street, Suite 800, Orlando, Florida 32801
Investigator: Doug Jamison Phone: 407.841.2279 Fax: 407.245.0327
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To assist Central Florida Regional Transit Authority (LYNX) in identifying local requirements for the application of lane assist technology and other ITS solutions, as part of a Bus Rapid Transit System.

Description. This Intelligent Vehicle Initiative (IVI) project provides input to the Bus Rapid Transit Intelligent Vehicle Initiative (BRT/IVI) Lane Assist Requirements project in Minnesota. LYNX is interested in implementing IVI lane guidance technology in Florida transit operations. Lane assist technology increases the safety of transit vehicles operating in narrow lanes, high-occupancy-vehicle lanes, and bus shoulder lanes, and allows the vehicle to operate at higher operating speeds. This project will identify the LYNX requirements for lane assist technology and enable a LYNX representative to serve on a steering committee with Metro Transit of Minneapolis on the development of national level requirements for lane assist technology. These local requirements, along with those from other supporting agencies, will be incorporated into a national standard for lane assist technology development and deployment for safe transit operations. Project is funded under the DOT National ITS Program.

Results Expected. The resulting requirements document will allow transit agencies to better plan and analyze the potential to implement lane assist technology systems.

Bus Rapid Transit IVI Lane Assist Technology Requirements
Project PA-26-7013
FY 2002 Funding: *$50,000* Schedule: August 2002 – July 2003
Performer: Pennsylvania Department of Transportation
P.O. Box 3365, Harrisburg, Pennsylvania 17105
Investigator: Chris Johnson Phone: 717.705.1493 Fax: 717.787.5491
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To assist Pennsylvania transit agencies in identifying local requirements for the application of intelligent vehicle lane assist technology and other intelligent transportation systems (ITS) solutions as part of the Bus Rapid Transit system. Lane assist technology increases the safety of transit vehicles operating in narrow lanes, high-occupancy-vehicle lanes, and bus shoulder lanes, and allows the vehicle to operate at higher operating speeds.

Description. Intelligent Vehicle Initiative (IVI) project provides input to the Bus Rapid Transit Intelligent Vehicle Initiative (BRT/IVI) Lane Assist Requirements project in Minnesota. This project is based on the Port Authority of Allegheny County's interest in the implementation of lane assist technology in transit operations. The project will identify Port Authority's requirements for lane assist technology and enable the Port Authority to serve on the steering committee with Metro Transit, for the development of national level requirements for lane guidance technology. Project is funded under the DOT National ITS Program.

Results Expected. The resulting requirements document will allow transit agencies to better plan and analyze the potential to implement lane assist systems.

Bus Rapid Transit Program Evaluation Support
Project PA-26-7010
FY 2002 Funding: $150,000 Schedule: October 2002 – April 2003
Performer: Milligan & Company, LLC
105-107 North 22nd Street, Philadelphia, Pennsylvania 19103
Investigator: James Buckley Phone: 410.732.4626 Fax: 612.348.3832
FTA Project Monitor: Stewart McKeown, TRI Phone: 202.366.0244 Fax: 202.366.3765
Email [stewart.mckeown@fta.dot.gov]

Objective. To evaluate the successful Pittsburgh West Busway Bus Rapid Transit (BRT) project. The West Busway objectives are to reduce traffic congestion, promote economic development, conserve energy and reduce air pollution, as well as improve access to jobs, and provide convenient connections to other fixed guideway facilities.

The Port Authority of Allegheny County's West Busway project has received several awards regarding its benefits to the community, aesthetic qualities, and innovative design and construction features. [http://www.portauthority.org/grow/capital/westbusway/index.asp]

Description. This project supported the evaluation of the West Busway Bus Rapid Transit (BRT) project in Pittsburgh, Pennsylvania, designed to increase ridership and improve mobility within the congested Parkway West corridor. The West Busway opened on September 8, 2000 and its quick and convenient access to and from downtown Pittsburgh made it an immediate success. The West Busway provides service to downtown Pittsburgh, Oakland, East Busway corridor, western Allegheny County neighborhoods and the Airport Corridor. The West Busway, a 5-mile exclusive bus right-of-way, serves approximately 48,000 riders each week, has six ADA-accessible stations with 24-hour lighting, and hundreds of new park-and-ride lot spaces, making public transit a more attractive option for many customers. The West Busway is the latest addition to the Port Authority of Allegheny County's system of bus rapid transit—that began with the South Busway in 1977, and then with the Martin Luther King Jr. East Busway in 1983.

Results Expected. "Evaluation of Port Authority of Allegheny County's West Busway Bus Rapid Transit," 2003 report published. Ridership increased from 3,722 in August 2000 to 8,732 riders in October 2002—a 135 percent increase in corridor ridership. The Port Authority has a network of three busways operating in the eastern, western and southern areas of Allegheny County that now carry a combined average of nearly 48,000 customers each weekday.

Bus Rapid Transit Technical Support
Project VA-26-7031.1
FY 2002 Funding: $300,000 Schedule: July 2002 – November 2004
Performer: Booz Allen & Hamilton
8283 Greensboro Drive, McLean, Virginia 22102
Investigator: Donald Schneck Phone: 703.902.5116 Fax: 703.902.3617
FTA Project Monitor: Helen Tann, TRI Phone: 202.366.0207 Fax: 202.366.3765
Email [Helen.tann@fta.dot.gov]

Objective. To provide technical and general program support for the FTA Bus Rapid Transit Demonstration Program—promoting the demonstration of fast bus service in selected American cities across the United States.

Description. This project provides for a range of professional services to support the implementation, operation, and evaluation of the ten national demonstration sites initially selected to participate in the FTA Bus Rapid Transit Demonstration Program, and other BRT Consortium projects that developed from cities not initially selected as a BRT demonstration site. To do this and to gain maximum benefit in terms of transferable knowledge and experience gained from these demonstration projects, contractor expertise and services are needed. These services include: specialized, onsite technical assistance, and evaluation and dissemination of technical, financial, and operational program information, useful to agencies considering the implementation of this flexible form of rapid transit. In 1999, the FTA embarked on the National BRT Demonstration Program to research, demonstrate, and deploy efficient fast bus service in American cities. Ten national demonstration cities/sites were

originally and competitively selected to participate in the program and incorporated into the BRT Consortium (now replaced by the National Bus Rapid Transit Institute).

Results Expected. BRT evaluation reports and white papers encourage BRT deployment—an effective lower cost alternative to expensive new rail transit. The "BRT Evaluation Guide for Bus Rapid Transit Demonstration Projects" is available online at URL [http://www.itsdocs.fhwa.dot.gov//JPODOCS/REPTS_TE//13831.html].

Clean Car Sharing & Mobility Program
Project CA-26-7036
FY 2002 Funding: $1,948,000 Schedule: August 2002 – July 2004
Performer: WestStart-CALSTART, Inc.
2181 E. Foothill Boulevard, Pasadena, California 91107
Investigator: Joe Boesel Phone: 616.744.5600 Fax: 616.744.5610
FTA Project Monitor: Irving Chambers, TRI Phone: 202.366.0238 Fax: 202.366.3765
Email [irving.chambers@fta.dot.gov]

Objective. To reduce congestion, increase ridership and connectivity to public transit, and improve air quality in American cities by incorporating clean fuel vehicles into urban car sharing programs, and combining clean car sharing programs with both mass transit and emerging Bus Rapid Transit systems.

Description. This project supports the deployment of innovative clean mobility services that provide an alternative to private automobile travel, increase ridership and connectivity to public transit, and reduce the environmental impacts of transportation. WestStart and Washington State partnered to establish Clean Mobility Centers (CMC) in American cities. These centers provide commuters and travelers with clean mobility alternatives, such as a Bikestation—which enables commuters to switch from a car-commute to a bike-commute. Under this Clean Car Sharing & Mobility Program, WestStart will undertake activities to determine (1) how clean fuel vehicles can be integrated into existing urban car sharing programs in American cities, and (2) how to combine clean car sharing programs with both mass transit programs and emerging bus rapid transit systems.

Results Expected. Clean transportation solutions--incorporate clean fuel vehicles into urban car sharing programs, combine clean car sharing programs with mass transit and emerging BRT systems to reduce congestion, increase ridership, and improve air quality in American cities.

Electronic Payment Guidelines Update
Project MA-26-7086
FY 2002 Funding: $25,000 Schedule: November 2002 – September 2004
Performer: Volpe National Transportation Systems Center
Research and Special Programs Administration
55 Broadway, Kendall Square, Cambridge, Massachusetts
Investigator: Leisa Moniz Phone: 617.494.3793 Fax: 617.494.2984
FTA Project Manager: Sean Ricketson, TRI Phone: 202.366.4209 Fax: 202.366.3765
Email [sean.ricketson@fta.dot.gov] *Email [leisa.moniz@volpe.dot.gov]*

Objective. To update existing Transit Electronic Payment Guidelines Documents.

Description. As part of the Department's National Intelligent Transportation Systems (ITS) Program, the Volpe Center developed a series of transit electronic payments guidelines documents, covering transit payment systems integration with other transit agencies, employers, universities, and financial institutions. These documents are available under the ITS Electronic Documents Library at URL [http://www.its.dot.gov/itsweb/welcome.htm]. This project will update these *Transit Electronic Payment Guidelines* documents to be consistent with the American Public Transportation Association's Universal Transit Farecard Stakeholders Program. Project is funded under the DOT National ITS Program.

Results Expected. Update existing documents to reflect industry changes. Transit operators considering interoperable payment systems in the future will have relevant documentation.

Integration of Forward and Side Collision Warning System
Project PA-26-7006.03
FY 2002 Funding: $750,000 Schedule: April 2002 – December 2004
Performer: Pennsylvania Department of Transportation
PO Box 3365, Harrisburg, Pennsylvania 17105-3365
Investigator: Chris Johnston Phone: 717.705.1493 Fax: 717.787.5491
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To develop specifications and a prototype for an integrated forward and side collision warning system for bus application, that prevent costly transit accidents.

Description. This project is a continuation of the side collision warning project to develop advanced safety systems for transit buses. To accomplish this effort, the Pennsylvania Department of Transportation partnered with the Carnegie Mellon University, Port Authority of Allegheny County, and Clever Devices to form a project team. This project team, in turn, partnered (via FHWA cooperative agreement) with the California DOT, San Mateo County Transit, California PATH, and Gillig Corporation to develop the integrated system performance specifications. This is the second phase of the program. It will include improvement to the side collision warning system, human factors testing, and development of the integrated operator interface. The overall program is expected to include $3 million in federal funds; a significant amount of simulation and testing to produce a prototype integrated forward and side collision warning system; and an accompanying specification for the system. Project is funded under the DOT National ITS Program.

Results Expected. A prototype integrated forward and side collision warning system for transit buses will be produced along with system specifications. The remaining phase of the program is expected to be funded in FY 2003. It will include validation testing of the integrated system in Pittsburgh and San Mateo, and the delivery of integrated forward and side collision warning system specifications.

ITS Rail/Bus Integration Project – Connection Protection
Project UT-26-7002.01
FY 2002 Funding: $527,000 Schedule: September 2002 – August 2003
Performer: Utah Transit Authority
3600 South 700 West, Salt Lake City, Utah 84130-0810
Investigator: Richard Hodges Phone: 801.262.5626 Fax: 801.287.4622
FTA Project Monitor: Terrell Willaims, TRI Phone: 202.366.0232 Fax: 202.366.3765
Email [terrell.williams@fta.dot.gov]

Objective. To further integrate Advanced Traveler Information System (ATIS) with the automated connection protection system now operating in Salt Lake City's light rail system, to provide patrons with real-time, up-to-date information on scheduled light rail system arrival and departure times, as well as emergency messages and system notifications.

Connection Protection/BusLink is a successful example of an integrated technology-based project designed to improve transit system performance and customer satisfaction. ITS America awarded this Light Rail to Bus Connection Protection Project the 2003 Best of ITS Award. The Connection Protection transit system was up and running during the 2002 Winter Olympics Games in Salt Lake City and declared a great success—effectively carrying more than four million Olympic riders. URL [www.itsa.org/awardnom.nsf/]

Description. This phase of the project supports further installation and integration of Advanced Traveler Information Systems (ATIS) with the Utah Transit Authority's (UTA) automated BusLink Connection Protection system—a system that prevents passengers from missing the connecting bus routes when transferring from the rail system. The system is part of a larger Bus/Rail Integration Project. In 2002, the Utah Transit Authority (UTA) in Salt Lake City implemented the nation's first known successful BusLink Connection Protection program for passengers transferring from the light rail system to buses. Funding partners for the entire project included the FTA, UTA, Utah DOT, and the Federal Highway Administration. The system was installed and initial testing completed in January 2002. The first full deployment of the system on February 1, 2002 covered 83 selected trips on 17 bus routes that connect to the rail system. Those routes carry an average of 7,700 passengers each weekday—about 10 percent of UTA daily bus ridership. The routes were prioritized based on average daily ridership and type of service.

Results Expected. The system provides improved customer satisfaction with transit services and critical information to bus operators, customer service personnel, and radio controllers, while helping improve overall operational coordination between bus and rail modes.
Initial results show that on average, eight buses are held each day. Departures are delayed from 3 to 15 minutes. Customers now know that if the train is late, they are not going to miss the connecting bus or face a long wait.

Description. This project supports the operation and maintenance of the National Bus Rapid Transit Institute. The Institute is a joint effort of the Center for Urban Transportation Research at the University of South Florida, and the Institute of Transportation Studies at the University of California at Berkeley. The Institute was established to complement the FTA Bus Rapid Transit initiative. Its mission is to facilitate the sharing of knowledge and innovation for increasing the speed, efficiency, and reliability of high-capacity bus service through the implementation of BRT systems in the United States. Overall, the Institute serves as a transit resource organization, aiding in knowledge dissemination and information sharing to transportation professionals, consultants, and communities via research, conferences, best practices manuals, publications, quarterly newsletters, and a website [http://www.nbrti.org/]. The Institute serves as a clearinghouse for BRT information and products, maintains videos and photo archives of BRT, conducts evaluation of BRT systems, and provides training and technical assistance to current BRT Consortium members and other agencies interested in developing fast and flexible bus service in their community, that increases transit ridership, relieves congestion, and improves air quality.

Results Expected. A comprehensive source of information on fast and flexible bus service in American cities to increase transit ridership. Communications and outreach activities include: BRT Quarterly Newsletter; Congressional, National and Local BRT Presentations; Study Missions; White Papers; and Website Maintenance.

National ITS Architecture Oversight & Technical Assistance
Project NJ-26-7005.02
FY 2002 Funding: $101,473 Schedule: September 2002 – December 2003
Performer: Palisades Consulting Group, Inc.
24 West Railroad Avenue, Suite 161, Tenafly, New Jersey 07670
Investigator: Eva Lerner Lam Phone: 201.567.0088 Fax: 201.567.8066
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To provide ongoing management oversight and technical assistance to transit agencies implementing intelligent transportation systems (ITS) technologies.

Description. This project provides ongoing management oversight and technical assistance to transit agencies implementing ITS technologies. It is part of a multi-year program activity that includes training in the National ITS Architecture requirements, and support in ITS architecture training provided by the Department of Transportation. The project includes contractor oversight support of the National ITS Architecture Consistency requirements, as well as technical assistance to at-risk grantees as it relates to the National ITS Architecture Consistency requirements. The National ITS Architecture provides a common framework for planning, defining, and integrating ITS technologies. Project is funded under the DOT National ITS Program.

Results Expected. Project results include assessment reports, useful to both FTA and grantees, to improve the industry's deployment of integrated ITS technologies and ensure compliance with FTA policy.

Real-Time Traveler Information Systems Assessment
Project OH-26-7017
FY 2002 Funding: $284,000 Schedule: April 2002 – July 2003
Performer: Battelle Memorial Institute, Columbus Laboratories
505 King Avenue, Columbus, Ohio 43201
Investigator: David Williams Phone: 614.424.3407 Fax: 614.424.5069
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To provide best practices and guidance information to the transit industry on the implementation of real-time traveler information systems. Assessment of the transit industry's implementation of next vehicle arrival systems for bus and rail systems.

Description. The project will conduct a real-time traveler information systems assessment of the transit industry's implementation of next vehicle arrival systems for bus and rail systems. The assessment will include a literature review, site visits to 5 transit agencies, and phone interviews with an additional 10 transit agencies to learn about their experiences during the implementation and operation phases of next vehicle arrival systems. The final product will be a guidance document. based on best practices throughout the transit industry on the implementation and operation of next vehicle arrival systems Project is funded under the DOT National ITS Program.

Results Expected. Best practices and guidebook will be produced to assist transit agencies plan and deploy real-time traveler information systems.

Transit ITS Standards Education & Outreach
Project NJ-26-7043.02
FY 2002 Funding: $300,000 Schedule: April 2002 - March 2004
Performer: Transit Standards Consortium
20 Chestnut Street, Suite 2, Tenafly, New Jersey 07670
Investigator: Richard Cox Phone: 724.772.4013 Fax: 724.776.0243
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To deliver training courses that increase transit agency understanding of transit intelligent transportation systems (ITS) standards and their application in the transit environment. ITS standards define how various system technologies and components interconnect and interact within an overall framework.

Description. The U.S. Department of Transportation has sponsored an extensive ITS standards outreach and training program to promote awareness and usage of ITS transit standards, including Transit Communication Interface Profiles (TCIP). This project is a continuation of the FY 2001 project to develop and deliver training courses for transit ITS standards. The project provides for the delivery of three sets of courses based on vehicle area networks, incorporating transit communications interface profiles (TCIP) into legacy systems,

and specifying ITS standards in procurement documents. During this activity, a set of four courses will be targeted and delivered to transit decision makers and implementers regarding the transit communication interface profiles standards and vehicle area network standards. This project supports educational/outreach activities to ensure that transit ITS projects are compatible with the national ITS architecture requirements. Project is funded under the DOT National ITS Program. More information on website at URL [www.tsconsortium.org].

Results Expected. Transit agency will understand contents of the vehicle area network and TCIP standards and will be able to use these standards to implement ITS systems.

Transit Signal Priority Technology
Project DC-26-7211
FY 2002 Funding: $200,000 Schedule: September 2002 – December 2003
Performer: Intelligent Transportation Society of America
400 Virginia Avenue, SW, Suite 800, Washington, DC 20024
Investigator: Hallie Smith Phone: 202.467.9297 Fax: 202.484.3483
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To provide technical assistance to the transit industry on the deployment of transit signal priority systems and to assess additional research needs. Transit signal priority improves transit travel times and the reliability of transit service.

Description. The purpose of this project is to obtain transit signal priority future research needs, and to conduct several outreach and technical assist workshops related to the implementation of transit signal priority systems for the Bus Rapid Transit (BRT) and general transit/traffic operations community. The project aims to bring information to the field where it is needed; provide the impetus to local governments, departments of transportation, and transit agencies to work together for transit signal priority implementation; discover from local professionals what is needed from US DOT to support and encourage transit signal priority implementation; report findings and update the ITS America document entitled *Overview of Transit Signal Priority*; and provide professional advice on the subject to the US DOT. The workshops will be highly interactive, offering participants the opportunity to network and engage in problem solving with team members Project is funded under the DOT National ITS Program.

Results Expected. Offer transit agencies opportunity to learn and exchange information with industry experts on issues related to transit signal priority system. Update ITS America document, *Overview of Transit Signal Priority*; to help identify the research necessary to improve transit signal priority.

Transit Vehicle Area Network Standards Migration
Project PA-26-7012.01
Funding: $150,000 Schedule: April 2002 – December 2004
Performer: Society of Automotive Engineers
1300 Eye Street, NW, Suite 1090 East Tower

Washington, DC 20005-3314
Investigator: Richard Cox Phone: 724.772.4013 Fax: 724.776.0243
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To develop and provide fundamental training on a higher speed, increased bandwidth vehicle area network standard, that will allow transit agencies to integrate systems onboard transit buses.

Description. This is the second phase of a multi-phase project to migrate the Society of Automotive Engineers (SAE) J-1708 onboard bus vehicle area network communications data standard to the higher capacity and more efficient SAE J-1939 standard. The vehicle area network is an essential component of the bus system; it allows systems to connect and data to be transferred over a standard communications interface. The first phase of the project was to update the transit standard based on the heavy-duty vehicle SAE J-1939 standard. The second phase will provide outreach and support activities regarding the standard. Project is funded under the National ITS Program, administered by the Department's ITS Joint Program Office.

Results Expected. An improved standard that can be used in transit agency specifications and allows transit agencies to more efficiently integrate onboard vehicle systems. Transit professionals will be trained on how to specify the standard and use standardized equipment on the vehicle.

Traveler Informatin Systems - ADA Guidebook
Project VA-26-7026.01
Funding: $294,000 Schedule: August 2002 – December 2003
Performer: Booz, Allen & Hamilton, Inc.
8283 Greensboro Drive, McLean, Virginia 22102-3838
Investigator: John Lovegrove Phone: 703.902.5606 Fax:
FTA Project Monitor: Brian Cronin, TRI Phone: 202.366.8841 Fax: 202.366.3765
Email [brian.cronin@fta.dot.gov]

Objective. To develop a guidebook for advanced traveler information systems appropriate for persons with disabilities.

Description: One of the most widely implemented intelligent transportation systems (ITS) technologies in public transit today is the traveler information system. This project provides additional support to enable the research team to complete the development of a guidebook for advanced traveler information systems appropriate for persons with disabilities. The project is based on research learned in an earlier project, *Bus Signage Guidelines for Persons With Visual Impairments*, and will include a literature review, telephone interviews, and a human factors assessment of bus signage in terms of meeting the requirements of the Americans with Disabilities Act (ADA). Project is funded under the National ITS Program, administered by the Department's ITS Joint Program Office.

Results Expected. Recommended practices and a set of guidelines to assist the transit industry in designing and installing state-of-the-art traveler information systems, compliant with the ADA requirements.

Universal Transit Farecard Stakeholders Program
Project MA-26-7080
FY 2002 Funding: $200,000 Schedule: November 2002 – October 2003
Performer: Volpe National Transportation Systems Center
Research and Special Programs Administration
55 Broadway, Kendall Square, Cambridge, Massachusetts
Investigator: Timothy Weisenberger Phone: 617.494.2151 Fax: 617.494.2984
FTA Project Manager: Sean Ricketson, TRI Phone: 202.366.4209 Fax: 202.366.3765
Email [sean.ricketson@fta.dot.gov] *Email [timothy.weisenberger@volpe.dot.gov]*

Objective. To provide committee facilitators to support the American Public Transportation Associations' (APTA) Universal Transit Farecard Stakeholders Program.

Description. This project provides committee facilitators to support APTA's Universal Transit Farecard Stakeholders (UTFS) Program. The facilitators support the four working committees of UTFS by facilitating bi-weekly committee conference calls, meetings, and the development and review of UTFS documents. The facilitators also advise the UTFS task force leadership on issues and assist with the development of presentation materials. The UTFS Program was established to provide guidance to the transit community, defining the business and technical interfaces that arise when transit agencies coordinate separate fare collection systems into regional transportation payments systems. The UTFS program brings together the expertise of the private sector and the needs of public transportation agencies in an industry forum.

Results Expected. Create a well-organized forum that inspires confidence among participants and encourages voluntary contributions. In the future, the project will result in industry consensus on how to build interoperable electronic fare payment systems.

Virtual Transit Enterprise Project
Project VA-03-1001.02
FY 2002 Funding: $1,121,936 Schedule: July 2002 – December 2003
Performer: South Carolina Department of Transportation
PO Box 191, Columbia, South Carolina 29202
Investigator: Glennith Johnson Phone: Fax:
FTA Project Monitor: Helen Tann, TRI Phone: 202.366.0207 Fax: 202.366.3765
Email [Helen.tann@fta.dot.gov]

Objective. To design, develop, implement, and demonstrate a Virtual Transit Enterprise system that electronically links South Carolina public transit providers with South Carolina Department of Transportation (DOT).

Description. This project supports the efforts of the South Carolina DOT to design, develop, implement, and demonstrate a Virtual Transit Enterprise (VTE) system that electronically links South Carolina public transit providers with South Carolina DOT, within a geographical region to share information and software applications. VTE enables transit providers to accomplish business-related activities in a more efficient and timely manner. This effort completes Phase 3 of the project. Major tasks include (1) installation and integration of remaining computer hardware, software, and networking equipment to support transit agencies, (2) user training and demonstration of VTE system, (3) documentation of VTE system benefits, and (4) cost estimate and plan to maintain VTE system. The VTE system links transit agencies with South Carolina DOT in an efficient network of information sharing and software applications. A Congressionally Directed Project.

Results Expected. South Carolina DOT will demonstrate and evaluate the VTE program and deliver a final project report.

Rural ITS Transit

New Mexico Client Referral, Ridership, and Financial Tracking Systems
Project NM-26-7003
FY 2002 Funding: $300,000 Schedule: December 2002 - October 2003
Performer: University of New Mexico
Alliance for Transportation Research Institute (ATR)
Albuquerque, New Mexico 87131
Investigator: Judith Espinosa Phone: 505.246.6410 Fax: 505.277.4185
FTA Project Monitor: William Wiggins, TRI Phone: 202.366.0255 Fax: 202.366.3765
Email [william.wiggins@fta.dot.gov]

Objective. To create a statewide and web-based software system that integrates the human services transportation referral process with daily rural public transit operations.

Description. This project implements a transit intelligent transportation system (ITS) architecture system that provides a statewide approach to managing subsidized transportation information. The project enables the Alliance for Transportation Research (ATR) Institute, working with the New Mexico Highway and Transportation Department, Public Transportation Programs Bureau (PTPB), to develop and implement a web-based software program called the Client Referral, Ridership, and Financial Tracking System (CRRAFT). This statewide program is designed to integrate human services transportation referral process with daily rural public transit operations. For human services agencies, CRRAFT standardizes client transportation referral and works with State Electronic Benefits Transfer Card. For transit operators, CRRAFT simplifies ridership reporting and invoicing. It will help the state and rural transit systems accurately track passengers and bill trips. CRRAFT's modular design supports easy modifications, including the addition of funding agencies such as the State Agency on Aging Programs, Indian and Public Health Services, and others. Project is funded under the National ITS Program, administered by the Department's ITS Joint Program Office.

Results Expected. CRRAFT has been deployed to 26 transit agencies in the state. Human services agencies refer clients for transportation through CRRAFT. New Mexico Medicaid program expects to use CRRAFT for its client referral process, and the smartcard for coordinating transportation services for Medicaid clients.

Northern Shenandoah Public Mobility Project
Project VA-26-7029.
FY 2002 Funding: $100,000 Schedule: September 2002 – December 2003
Performer: Northwestern Community of Services
209 West Criser Road, Front Royal, Virginia 22630
Investigator: Michael Hite Phone: 540.636.4250 Fax: 540.636.7171
FTA Project Monitor: William Wiggins, TRI Phone: 202.366.0255 Fax: 202.366.3765
Email [william.wiggins@fta.dot.gov]

Objective. To pilot a mobility project using ITS technologies to coordinate more efficient use of human services transportation vehicles.

Description. The Northern Shenandoah Valley Public Mobility Program is an effort by a group of human service agencies and non-profit organizations to provide improved transportation in the rural Northern Shenandoah Valley region of Virginia. It is a phased program to demonstrate the integration of public transit and Health and Human Services in a five county area of the Northern Shenandoah Valley. The target group includes people who are mentally or physically challenged, the elderly, and persons in welfare-to-work programs. The first phase supports development of a prototype intelligent transportation system (ITS) to integrate public transit operations and human service agencies referral process in rural areas. Under this project, the Northern Shenandoah Valley Public Mobility Program will install and demonstrate an internet-based ITS software-scheduling program, that provides shared transit services among constituents of participating agencies. Fifteen different social services agencies will be linked for the sole purpose of improving the use of transportation vehicles. This project is an attempt by a community service agency to coordinate transit agency services across a multitude of social services organizations and funding activities. Project is funded under the National ITS Program, administered by the Department's ITS Joint Program Office.

Results Expected. By applying ITS technologies, this program expects to create an environment that stimulates and supports community partnerships, encouraging locals to build a sustainable transportation infrastructure; and to improve transit services by coordinating public transportation services with social services.

Rural Intelligent Transportation Systems Shared Communications Research
Project TN-26-7003
FY 2002 Funding: $300,000 Schedule: October 2002 - December 2003
Performer: Department of Energy, Oak Ridge National Laboratory
PO Box 20008, MS-6206, Oak Ridge, Tennessee 37831
Investigator: Dr. Edmond Chin-Ping Chang Phone: 865.574.5003 Fax: 202.646.7878

Fleet Operations – ITS Transit Projects

FTA Project Monitor: William Wiggins, TRI Phone: 202.366.0255 Fax: 202.366.3765
Email [william.wiggins@fta.dot.gov]

Objective. To conduct a study that focuses on communications infrastructure and information sharing among rural transit operators and other public service agencies; and To develop a needs report for transit ITS technology application in national park transport services.

Description. For rural communications, the lack of an affordable communications infrastructure hinders the coordination of services of local transit operators. Oak Ridge National Laboratories (Oak Ridge Lab) will examine the actual and potential usage of shared intelligent transportation systems (ITS) communication technology by rural transit providers and other public service agencies, including police, fire, and emergency services; and document real-world examples of multi-service providers that successfully demonstrate best practices in deployment of shared communication technologies, and the unique operations involved in getting a communication infrastructure in place. Both technical and institutional issues will be researched. In addition, Oak Ridge Lab will provide technical assistance and participate in the National Park Service "Alternative Transportation Study " at both the Colonial National Historic Park Service and Great Smokey Mountains National Park. Project is funded under the National ITS Program, administered by the Department's ITS Joint Program Office.

Results Expected. Best practices document on shared ITS communication technology, a Needs Study report regarding institutional coordination issues, and use of transit ITS technology supporting transportation needs of both national parks.

Specialized Customer Services Projects

Goal: Improve services for low-income, elderly, and other transit-dependent individuals, including persons with disabilities.

Accessible Transportation – Easter Seals Project ACTION
Project DC-26-7129
FY 2002 Funding: $3,000,000 Schedule: March 2002 – February 2004
Performer: Easter Seals Project ACTI"ON
700 Thirteenth Street, NW, Suite 200
Washington, DC 20005
Investigator: Alan Abeson Phone: 202.347.3066 Fax: 202.737.7914
FTA Project Monitor: Elizabeth Solomon, TRI Phone: 202.366.0242 Fax: 202.366.3765
Email [elizabeth.Solomon@fta.dot.gov] Email [AAbeson@opa.easter-seals.org]

Objective. To develop a Research, Demonstration, and Technical Assistance Program that promotes increased mobility for persons with disabilities.

Description. Easter Seals Project ACTION (Accessible Community Transportation in Our Nation) continues to promote cooperation between the disability community and transportation industry. Project ACTION conducts a research, demonstration, and technical assistance program to promote increased mobility for persons with disabilities. This includes advancing local demonstration and technical assistance projects that identify persons with disabilities and their transportation needs, and recommend remedial action; provide training programs for transit operators; develop assertive programs for people with disabilities; identify technology that could solve critical transportation accessibility issues; and continue to advance outreach and marketing programs. Project ACTION is a congressionally created national technical assistance program authorized under the Intermodal Surface Transportation Efficiency Act (ISTEA). It provides training, resources and technical assistance to thousands of disability organizations, consumers with disabilities, and assists local transportation operators in implementing the requirements of the Americans With Disabilities Act (ADA). Project ACTION maintains a resource center with up-to-date information on transportation accessibility. This is a congressionally directed project.

Results Expected. Products include: Facilitator Manual - Transportation Solutions for Caregivers; Taxicab driver brochure; Training course for Motorcoach Companies; Buses and Trains for Everyone - a curriculum for Grades K – 8; and a website with relevant and useable published materials for everyone as well as training videos, and instructional games at URL [http://www.projectaction.org/].

Hennepin County Community Works Program
Project MN-26-7002.6
FY 2002 Funding: $1,000,000 Schedule: September 2002 – September 2004
Performer: Hennepin County Regional Railroad Authority
300 South Sixth Street, Minneapolis, Minnesota 55487
Investigator: Larry Blackstad Phone: 612.348.5859 Fax: 612.348.3832
FTA Project Monitor: Stewart McKeown, TRI Phone: 202.366.0244 Fax: 202.366.3765

Email [stewart.mckeown@fta.dot.gov]

Objective. To develop an intergovernmental planning framework for infrastructure investment—a comprehensive planning tool designed to assist in the coordination, planning, and effective use of multi-jurisdictional infrastructure and economic investments.

Description. Hennepin County, the City of Minneapolis, the Minneapolis Park and Recreation Board, the Suburban Hennepin Regional Park District, and the Minneapolis School District have developed an intergovernmental planning framework for infrastructure investment called Hennepin Community Works Program (HCWP). HCWP is a comprehensive planning tool designed to assist in the coordination, planning, and effective use of multi-jurisdictional infrastructure and economic investments. Research projects are selected that will increase overall mobility and access to employment opportunities, encourage creation of new jobs through business development, and improve the residential and commercial tax base by enhancing property values. Several research studies are currently underway, such as: (1) examining how roadway design standards can be modified to better accommodate transit infrastructure, (2) examining potential economic impact of transit alternatives within an urban corridor, (3) examining the cost/benefit of transit oriented development, and (4) examining the application of bus rapid transit and Diesel Motor Unit technologies to new transit corridors. This amendment will assist Hennepin County's continuing effort to develop and apply the information generated through the HCWP projects to the development of a model for transit-oriented infrastructure improvements. The model will serve as a guide for other communities in developing solutions to the growing problem of economic deterioration in urban neighborhoods and suburban municipalities. This is a congressionally directed project.

Results Expected. Development of a model for transit-oriented infrastructure improvements, that will serve as a guide for other communities in developing solutions to the growing problem of economic deterioration in urban neighborhoods and suburban municipalities.

Independent Transportation Network in Portland, Maine
Project ME-26-7001
FY 2002 Funding: $494,245 Schedule: March 2002 – March 2003
Performer: Independent Transportation Network
90 Bridge Street, Westbrook, Maine 04092
Investigator: Katherine Freund Phone: 207.854.0505 Fax: 207.854.1026
FTA Project Monitor: Stewart McKeown, TRI Phone: 202.366.0244 Fax: 202.366.3765
Email [stewart.mckeown@fta.dot.gov]

Objective. To develop a community-based transportation service for elderly without public subsidies.

Description. This project enables the Independent Transportation Network to complete the deployment of the innovative Independent Transportation Network (ITN) in the Portland, Maine area. ITN is designed to be a financially self-sufficient transportation program, for the provision of transportation services for elderly citizens who can no longer safely drive their

own automobiles. Designed to serve as a national model for communities planning for the specialized transportation needs of elderly citizens, ITN uses innovative methods to provide transportation services for elderly persons, including standard sedans and unique payment plans. In addition, the program uses integrated computerized management systems to manage all administrative tasks including coordinating volunteer drivers, ride planning and scheduling, and billing riders. ITS technologies are used to provide safer, more efficient and accessible transportation services that can be easily replicated in communities across the nation. The program uses standard sedans to match the convenience of a personal vehicle, and offers several non-traditional payment methods. ITN uses both paid and volunteer drivers to provide door-to-door service, seven days a week, 24 hours a day. With a cashless, pre-paid account system, seniors pay for their rides by the mile, earning discounts for advance planning and ridesharing. Community programs like the Adult Child Payment Program, Ride & Shop, Healthy Miles, Ride Services, and Car Trade not only help seniors pay for their rides, they connect the community in a web of support for mobility as a common good. ITN Website [<http://www.itninc.org/>].

Results Expected. A self-sustaining transportation service for the elderly in Portland, Maine--provides 1,500 rides per month, no public subsidies, and with standard sedan vehicles; uses both paid and volunteer workers to provide door-to-door service, seven days a week and 24-hours a day, with a cashless pre-paid accounting system.

Job Access & Reverse Commute Evaluation
Project MA-37-7001 Schedule: September 2002 - September 2003
FY 2002 Funding: $74,000
Performer: Multisystems, Inc.
10 Fawcett Street, Cambridge, Massachusetts 02138
Investigator: Rosemary Mathais Phone: 802.649.5294
FTA Project Monitor: Douglas Birnie, TRI Phone: 202.366.9157 Fax: 202.366.3765
Email [Douglas.birnie@fta.dot.gov]

Objective. To evaluate the performance of the FTA Job Access and Reverse Commute (JARC) Grant Program during fiscal year 2002, to analyze and provide recommendations on how FTA may improved the JARC Program reporting process and evaluation methods in future years.

Description. The JARC grant program is designed to assist states and localities in developing new or expanded transportation services that connect welfare recipients, low income and unemployed persons to jobs and other employment related services. Job Access projects are targeted at developing new or expanded transportation services such as shuttles, vanpools, new bus routes, connector services to mass transit, and guaranteed ride home programs for welfare recipients and low income persons. Reverse Commute projects provide transportation services to suburban employment centers from urban, rural and other suburban locations for all populations. This project will analyze required data reports electronically submitted by the JARC grantees and provide an evaluation report on the results of JARC transportation projects operating during FY 2002. The analysis will focus on the new access to employment and support services such as child care and training generated by funded

transportation services, the use of those services as measured by ridership and the planning, financial and service delivery partnerships instituted to support and provide project services. The project will examine current FTA data collection methodologies, survey grantees on the effectiveness and difficulties encountered and prepare options and recommendations for improvements and alternatives to the current data collection and evaluation methods.

Results Expected. The project will document and analyze the effectiveness of the JARC Program; provide recommendations for improved program evaluation techniques; and deliver a report on JARC grantee reaction to current evaluation techniques, a report on JARC program performance in FY 2002, and a report on recommendations for future analysis.

National Joblinks Employment Transportation Initiative
Project: DC-26-7128
Funding: $1,048,000 Schedule: October 2002 - October 2003
Performer: Community Transportation Association of America (CTAA)
1341 G Street, NW, Suite 600, Washington, DC 20005
Investigator: Charles Dickson Phone: 202.661.0208 Fax: 202.737.9197
FTA Project Monitor: Pauline D'Antignac, TRI Phone: 202.366.0234 Fax: 202.366.3765
Email [pauline.dantignac@fta.dot.gov]

Objective. To aid states and communities in exploring and implementing additional employment transportation services for low-income persons by providing an information network on employment transportation and technical assistance, as well as testing new approaches to delivering employment transportation.

Description. Joblinks—Connecting people to jobs. This project continues the National Joblinks Employment Initiative--the seventh round of congressionally directed Joblinks activities. The FTA National Joblinks program is a technical assistance and demonstration program designed to test innovative ways of connecting welfare recipients and other unemployed or underemployed low-income persons to jobs and job support services. CTAA administers the Joblinks program and funds projects demonstrating innovative employment transportation solutions. This project provides support for activities including support to conduct employment transportation demonstration projects that enhance transit's role in employment transportation and activities. The project also provides for a national technical assistance and information dissemination program on employment transportation. This includes (1) a real-time technical assistance program and workshops for Job Access and Reverse Commute program grantees and applicants, and (2) an employment information clearinghouse and technical assistance center, through the National Transit Resource Center and national employment transportation information website at URL [http://www.ctaa.org/].

Results Expected. Five demonstration projects on innovative approaches to employment transportation, capacity building activities for JARC grantees including a Real-Time Learning System and peer review of grantees, and continuation of Employment Transportation resource center.

National Consortium on the Coordination of Human Services Transportation
Project DC-26-7140.
FY 2002 Funding: $435,000 Schedule: August 2002 – August 2003
Performer: Community Transportation Association of America
1341 G Street, NW, 10th Floor, Washington, DC 20005
Investigator: Charles Dickson Phone: 202.661.0208 Fax: 202.737.9197
FTA Project Monitor: Douglas Birnie, TRI Phone: 202.366.1666 Fax: 202.366.3765
Email [Douglas.birnie@fta.dot.gov]

Objective. To provide a forum to identify and discuss issues associated with the coordination of human service transportation programs, and to develop working partnerships among human service and transportation organizations to provide information, technical assistance and strategies to implement coordinated delivery of human services transportation.

Description. This cooperative agreement enables the Community Transportation Association of America (CTAA) to support the activities of the National Consortium on the Coordination of Human Services Transportation, in cooperation with the FTA, to carry out research activities, prepare technical assistance materials, and conduct educational services that increase the awareness of human services transportation coordination. The mission of the Consortium is to build a strong network of transportation and human service professionals and policymakers at every level, who understand the issues involved in the coordination of human services transport and how this coordination can be accomplished. The Consortium activities include: (1) providing information and support services on the State Medicaid Pass and Brokerage Activities, (2) identifying and analyzing promising practices and obstacles to human services transportation coordination, (3) maintaining the Coordinating Council on Access and Mobility Website, and (4) developing a comprehensive Educational Outreach Plan for members and organizations. A Congressionally Directed Project.

Results Expected. In 2002 the Consortium produced a survey of states to identify states with Medicaid transit pass and brokerage programs, Internet briefs on brokerage, Medicaid transit pass and successful human services coordination systems, and other publications.

Metropolitan/Rural Policy Development

GOAL: Develop better estimates of transit conditions, performance, investment needs and research policies to improve transit ridership, performance, and financing.

Development of a Redesigned WebPage
Project No. DC-26-4006
FY 2002 Funding: $43,000 Schedule: May 2002 – September 2003
Performer: U.S. Department of Transportation
Transportation Administrative Service Center
Washington, DC 20590
FTA Project Monitor: William B. Menczer, TBP Phone: 202.366.1698 Fax: 202.366.7116
Email [william.menczer@fta.dot.gov]

Objective. To support development of a redesigned and improved Department of Transportation webpage that receives electronic public comments, in support of the reauthorization of TEA-21.

Description. The Internet and other new information and communication technologies are changing the way organizations operate and conduct business. Electronic business practices are revolutionizing the way public transportation services are delivered and organizations are structured. This project supports the development of a redesigned and improved Department of Transportation (DOT) webpage that receives electronic public comments in support of the reauthorization of TEA-21, called *Safe, Accountable, Flexible, and Efficient Transportation Equity Act of 2003.* The redesigned web page offers the public a more efficient and customer-friendly port of entry for citizen participation and input into the development of this legislative proposal.

Results Expected. Public comments and redesigned webpage in support of SAFETEA 2003 [http://www.dot.gov/]

Transit Performance Monitoring System (TPMS)
Project DC-26-2002.02
FY 2002 Funding: $192,430 Schedule: July 2002 – June 2003
Performer: American Public Transportation Association
1201 New York Avenue, NW, Washington, DC 20005
Investigator: Richard Weaver Phone: 202.496.4809 Fax: 202.496.4322
FTA Project Monitor: Nancy Ody, TBP Phone: 202.366.0177 Fax: 202.366.7116
Email [nancy.ody@fta.dot.gov]

Objective. To develop objective data on the role of transit in serving the needs of transit riders and communities for the Transit Performance Monitoring System.

Description. This research project further develops the Transit Performance Monitoring System (TPMS), a method for measuring how well transit is performing three public policy roles: basic mobility, transit oriented development, and traffic congestion management. To

accomplish the TPMS objectives, three major tasks will be performed: (1) Develop and promote a standard set of questions for use in onboard surveys by transit agencies participating in the TPMS, (2) Increase transit operator participation in TPMS, and (3) Manage the collection and analysis of industry data from transit systems. A Congressionally Directed Project.

Results Expected. Approximately 30 transit system responded to the survey. This information, regarding transit's role in serving the needs of riders and communities, will be documented and submitted to FTA in December 2003. The project will develop a report on the responses of transit riders in Buffalo, New York, regarding their experiences with public transit and the contribution transit has made in their lives

Planning & Project Development

GOAL: Enhance state of the practice in multimodal transportation planning and systems analysis.

Formation of New Metropolitan Planning Organizations

Project MA-26-1003

FY 2002 Funding: $50,000 Schedule: October 2002 – July 2003

Performer: Planners Collaborative, Inc.
273 Summer Street. Boston, Massachusetts 02210

Investigator: Terry Regan Phone: 617.338.0018 Fax: 617.338.4228

FTA Project Monitor: Robin Mayhew, TPL Phone: 202.366.1454 Fax: 202.493.2478

Email [robin.mayhew@fta.dot.gov]

Objective. To provide case studies of effective metropolitan transportation planning practices that will assist local and state officials address the needs of the newly designated urbanized areas (UZAs), including the formation of new metropolitan planning organizations (MPOs). [http://www.planning.dot.gov/]

Description. This project supported development of case studies on ten active and newly formed metropolitan planning organizations (MPOs), established subsequent to the 1990 Census. Ten case studies were prepared to assist local and state official better understand how each area/case study responded to the requirements of MPO formation. The case studies provide first hand, initial start-up information regarding the administrative, policy, and technical development of a metropolitan transportation planning practice, as experienced by the ten active MPOs designated subsequent to the 1990 census. Just as the 1990 Census resulted in the designation of new UZAs and prompted the need to initiate metropolitan planning and establish new MPOs, the Year 2000 Census also identified new UZAs. These new UZAs, in turn, need either to form new free-standing MPOs or affiliate with an existing MPO. These case studies were prepared to assist local and state officials, in the process of addressing newly designated urbanized areas. The Census Bureau defines UZAs, and transportation policy requires MPOs to be established in urbanized areas. UZAs are defined as areas with a population of 50,000. In metropolitan areas with more than 50,000 population, the responsibility for transportation planning lies with the designated MPO.

Results Expected. Ten online case studies to assist local and state officials in the process of addressing newly designated urbanized areas, and to understand federal requirements related to the MPO formation. Case studies available online at URL [http://www.planning.dot.gov/].

Guidance and Outreach on Flexible Funding
Project VA-08-1002
FY 2002 Funding: $93,000 Schedule: October 2002 - March 2004
Performer: AECOM Consulting Transportation Group, Inc.
2751 Prosperity Avenue, Suite 300, Fairfax, Virginia 22031
Investigator: Jennifer Binder Phone: 703-645-6846 Fax:
FTA Project Monitor: Daran Allan, TPL Phone: 202.366.6694 Fax: 202.493.2478
Paul R. BraEmail [vicki.bellet@fta.dot.gov]

Objective. To provide guidance on flexible funding to help state and local governments and transportation operators make better decisions to meet economic needs more effectively. Flexible Funding embodies the notion of "flexing" or transferring funds between different modes of transportation, and helps to ensure more optimum use of current flexible funding provisions.

Description. This project will provide guidance for decision makers at the local, regional and state level, including greater familiarity and understanding of the flex funding processes and procedures as well as the issues and emerging techniques of flexible funding. The research addresses barriers, institutional issues, as well as best practice techniques of flexible funding in a multi-modal environment. The scarcity of resources for transportation projects has encouraged a more multi-modal approach to the acquisition, management, and operation of transportation systems nationally. Transportation officials are faced with making economic-based decisions considering the cost and benefit among several alternatives. The flexible funding provision of TEA-21 is one alternative that supports economic-based analysis. Flexible funding provision of TEA-21 supports the "flexing" or transfer of funds from Title 23 of the highway program to transit projects; and from transit funds under Title 49 to roadway projects. It helps to ensure more optimum use of the current flexible funding provisions.

Results Expected. Effective Flexible Funding Practices Report

New Stars Annual Report – Technical Support
Project MA-90-1010
FY 2002 Funding: $100,000 Schedule: September 2002, March 2005
Performer: Harvard Design & Mapping Company
30 Spinelli Place, Cambridge, Massachusetts 02138
FTA Project Monitor: Dwayne Weeks, TPL Phone: 202.366.5653 Fax: 202.493.2478
Email [Dwayne.weeks@fta.dot.gov]

Objective. To support development of the Annual Report on New Starts.

Description. This project supports the Office of Planning effort to develop the Annual Report on New Starts to the U.S. Congress. The Report to Congress provides the U.S. Department of

Transportation's recommendations for allocation of funds to be made available under 49 U.S.C. 5309 (o) (1) for the construction of new fixed guideway systems and/or extensions to existing fixed guideway systems (new starts or major capital investments) for the fiscal year 2002. Under this project, the contractor will continue to perform data entry and quality control for the New Starts database, provide electronic and paper copies of maps of individual New Starts projects digitized in a Transcad compatible GIS system, as well as all project maps, and prepare the New Starts report in a format suitable for electronic publishing on the FTA Internet Home Page.

Results Expected. New Starts Annual Report to the U.S. Congress

New Starts Roundtable Support Services
Project MA-26-1004
FY 2002 Funding: $100,000 Schedule: September 2002 – September 2003
Performer: Planners Collaborative, Inc.
273 Summer Street, Boston, Massachusetts 02210
FTA Project Monitor: Tonya Holland, TPE Phone: 202.366.5653 Fax: 202.493.2478
Email [tonya.Holland@fta.dot.gov]

Objective. To support the planning, managing, and hosting of the FY 2002 New Starts Roundtable series.

Description. This project provided for professional services to support the planning and hosting of the fiscal year 2002 New Starts Roundtable series. Support services included management of logistics, development of New Starts Roundtable resources, and drafting of New Starts Roundtable proceedings. For the past two years, the New Starts Roundtable meetings have proven to be a successful forum for the sharing of information between FTA and grantees. Each meeting has attracted approximately 50-80 transit professionals. The Office of Planning conducts the New Starts Roundtable series to facilitate communication, discussion, and information sharing among the various parties involved in the FTA New Starts Program. This Roundtable activity enables FTA to clarify and discuss the major issues faced by local transit agencies seeking to qualify for Section 5309 capital funding under the New Starts project development process. At the same time, the Roundtable provided a forum for local agencies to discuss their concerns and to share lessons learned and other information with members.

Results Expected. The New Starts Roundtable serves as an effective forum for the sharing of information between FTA and grantees and as a mechanism for strengthening the partnership between FTA and local providers of public transit. It also provides an ongoing forum for training, information exchange, and open discussion of lessons learned, as well as ideas for improving the planning and project development process for major transit capital projects.

Planning Capacity Building Program
Project MA-26-1002
FY 2002 Funding: $500,000 Schedule: November 2002 – November 2003

Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: William Lyons Phone: 617.494.2102 Fax: 617.494.3398
FTA Project Monitor: Effie Stallsmith, TPE Phone: 202.366.5653 Fax: 202.493.2478
Email [effie.stallsmith@fta.dot.gov]

Objective. To improve transportation planning and decision making in metropolitan and rural areas.

Description. Under co-sponsorship of the FTA and FHWA, the Planning Capacity Building Program provides training, technical assistance, and support to transit operators, metropolitan planning organizations (MPOs), state departments of transportation (DOTs), and other stakeholders to improve transportation planning and decision making in metropolitan and rural areas. The project involves identifying, assessing, and responding to the information and training needs of planning participants. The Planning Capacity Building Program includes products and services such as, the development and upgrading the website containing case studies and effective practices on a variety of topics, sponsoring and facilitating peer-exchange workshops, enabling planning partners to learn from each other, and developing briefing books on selected planning topics. Website URL [http://www.planning.dot.gov/]

Results Expected. Case studies and best practices that improve transportation planning and decision making in metropolitan and rural areas.

Planning Oversight Compliance in Metropolictan Areas
Project MA-90-1008
FY 2002 Funding: $269,000 Schedule: March 2002 - March 2004
Performer: Cambridge Systemstics, Inc.
222 Third Street, Cambridge, Massachusetts 02142
Investigator: Samuel Lawton Phone: 617.354.0167 Fax: 617.354.1542
FTA Project Monitor: Ken Lord, TPE Phone: 202.366.2836 Fax: 202.493.2478
E-mail [ken.lord@fta.dot.gov]

Objective. The objective of this project is to obtain contractor support in assessing compliance with metropolitan planning requirements and in addressing noted deficiencies.

Description. The project will develop and present case studies and guidance materials to assist Transportation Management Areas (TMAs) and non-TMAs in meeting federal planning requirements. Focus Areas to be considered include financial planning and analysis, public involvement, and the integration of transportation and land use planning at the metropolitan planning organization (MPO) level. In non-TMAs, the project will produce a series of proposals for a strategy to monitor and assess planning performance in a constructive, non-intrusive way, consistent with present regulatory provisions. Using information collected, the contractor will analyze and document the extent to which federal requirements in the Focus Areas are being satisfied. This analysis includes an explicit statement of what those requirements are and how well they are met by TMAs in terms of their multimodal planning

responsibilities. A summary report of planning performance in non-TMAs will be provided, along with recommendations for future performance reviews. The research includes recommendations on how to improve overall fulfillment of the Federal requirements in the identified Focus Areas.

Results Expected. To increase effectiveness of oversight reviews, responsiveness to issues of non-compliance, and enhance federal stewardship of metropolitan planning programs in all urbanized areas across the U.S. Provide case studies and guidance materials, identify MPO planning needs and deficiencies, and recommend strategies to improve MPO performance.

Professional Capacity Building Projects

GOAL: Attract, train, and retain a Quality Transit Workforce.

National Transit Institute
Project NJ-26-7006
FY 2002 Funding: $4,000,000 Schedule: July 2002 - June 2003
Performer: Rutgers, The State University of New Jersey
National Transit Institute, 120 Albany Street
New Brunswick, New Jersey 08901-2163
Investigator: Paul Larrousse Phone: 732.932.1700 Fax: 732.932.1707
FTA Project Manager: Lydia Mercado, TRI Phone: 202.366.5741 Fax: 202.366.3765
Email [lydia.mercado@fta.dot.gov] Email: [plarrousse@nti.rutgers.edu]

Objectives. To provide ongoing support to the National Transit Institute—a Training & Education Resource for the Transit Industry—to enhance the skills of the transportation workforce in transit agencies, state departments of transportation, metropolitan planning organizations, local and federal government; and to increase transit system security readiness, transit ridership, and workplace safety through training.

Description. This project provides ongoing support to the National Transit Institute (NTI) *[49 U.S.C. § 5315],* established in 1992 at Rutgers, The State University of New Jersey to meet the training and development needs of the transit industry workforce. Terrorist events of September 11, 2001, preempted the Institute to act quickly and focus on anti-terrorist training needs of the transit industry. Two new transit security training courses are now available for front-line employees and supervisors.

The NTI continues to serve as a major resource in support of the implementation of federal regulations and policy initiatives, as well as implementation of new and innovative practices and technologies. The Institute develops and teaches new methods and techniques to improve transit workforce performance and increase productivity in the workplace. Courses are conducted locally at sites nationwide. Training areas include: Advanced Technologies, Transit Program Management and Compliance, Multimodal Transportation Planning, Safety and Security, and Management Development. Transit Trainers Workshop is conducted annually for trainers and human resource specialists from the industry. NTI delivers new transit system security courses to trainers and frontline employees throughout the United States, develops pocket guides for security awareness, and an interactive CD of the Transit System Security Awareness courses with specialized modules for heavy rail, light rail, commuter rail, and bus operations.

Results Expected. Two transit security training courses are now available for front-line employees and supervisors, *System Security Awareness for Transit Employees,* and *Security Incident Management of Transit Supervisors.* In 2002 NTI offered approximately 50 different training courses throughout the nation, totaling 350 course deliveries. Website URL [www.ntionline.com]. A Congressionally Directed Project.

Transit Cooperative Research Program
Project DC-26-7150
FY 2002 Funding: $8,250,000 Schedule: February 2002 – May 2004
Performer: National Academy of Sciences
Transportation Research Board, National Research Council
400 Fifth Street, NW, Washington, DC 20001
Investigator: Christopher Jenks Phone: 202.334.3089 Fax: 202.334.2006
FTA Project Monitors: Lisa Colbert, TRI Phone: 202.366.9157 Fax: 202.366.3765
Email [lisa.Colbert@fta.dot.gov]

Objective. To address the needs of the transit industry workforce through innovative research, education, and information sharing; and to develop innovative near-term solutions to meet the demands placed on the transit industry.

Description. The Transit Cooperative Research Program (TCRP) addresses the needs of the transit workforce through innovative research, education, and information sharing, and develops innovative near-term solutions to meet the demands placed on the transit industry. The FTA established the TCRP, which was authorized as part of ISTEA and reauthorized by TEA-21, in July 1992. The program focuses on issues significant to the transit industry, with emphasis on local problem-solving research. The TCRP conducts research in a variety of transit fields such as planning, service concepts, vehicles and equipment, facilities, operations, human resources, maintenance, policy, and administrative practices. TCRP synthesis reports summarize best industry practices and have been useful to transit operators. The TCRP International Transportation Studies Program assists in the professional development of transit managers, public officials, and others charged with public transportation responsibilities. The terrorist events of September 11, 2001, directed TCRP to focus its resources for security-related research, designated as the *TCRP Special Project J1-10, Security-Related Research for Public Transportation.* TCRP established a Security Task Force, created two TCRP formal panels to oversee security research, and sought contractor support to assist the Task Force in determining how best to allocate security funds. To date the Security Task Force has endorsed 13 topics by the technical panels.

Results Expected. The Transportation Research Board administers the TCRP and maintains a publications listing and description of all TCRP studies on TRB website at URL [http://www4.trb.org/trb/onlinepubs.nsf]

University Transporation Centers
Project DC-11-1113
FY 2002 Funding: $ 6,000,000 Schedule: July 2002 – June 2003
Performer: Research and Special Programs Administration
U.S. Department of Transportation, Washington, DC 20590
FTA Project Monitor: Lydia Mercado Phone: 202.366.5741 Fax: 202.366.3765
Email [Lydia.Mercado@fta.dot.gov]

Objective. To increase the knowledge base of multimodal transportation through primary and applied academic research, to educate transportation professionals in a variety of academic

disciplines, and to disseminate the results of the research to policy makers, transportation agencies and related constituencies.

Description. This project provides ongoing support for the U.S. Department of Transportation's University Transportation Centers Program *(49 U.S.C. § 5505)*. The University Transportation Centers is the largest program in the United States that provides higher education for the next generation of transportation professionals. The University Transportation Centers Program addresses the areas of multimodal transportation research, education, and technology transfer. Each of the 27 university centers has a different theme, including the four (below) sponsored by FTA, and conducts annual activities in fulfillment of the strategic plan submitted to the Research and Special Programs Administration of the U.S. Department of Transportation:

1. Northwestern University – Infrastructure Technology [http://iti.acns.nwu.edu],
2. University of Minnesota – Human-Centered Transportation Technology [http://www.its.umn.edu],
3. University of South Florida – Transit and Alternative Forms of Urban Transportation [http://www.nctr.usf.edu], and
4. South Carolina State University – Professional Capacity Building in Transportation [http://www.utc.scsu.edu].

Results Expected. The Centers program provides valuable research to solve transportation problems, recruits and educates next generation of transportation professionals; and broadens the Centers' focus to better encompass transit industry research needs and transfers the knowledge relevant to national, state, and local issues. A Congressionally directed project. University Transportation Centers Website URL [http://utc.dot.gov/].

Small Business Innovation Research Program
Project MA-26-7076
FY 2002 Funding: $300,000 Schedule: November 2002 – November 2003
Performer: Volpe National Transportation Systems Center
Kendall Square, Cambridge, Massachusetts 02142
Investigator: Joseph Henebury Phone: 617.494.2051 Fax: 617.494.2370
FTA Project Monitor: Stewart McKeown, TRI Phone: 202.366.0244 Fax: 202.366.3765
Email [stewart.mckeown@fta.dot.gov]

Objective. To involve small, high technology businesses in addressing FTA research needs.

Description. The Department's Small Business Innovative Research (SBIR) program seeks to utilize the entrepreneurial initiative of small high technology firms in meeting federal research and development objectives. Annually, the Department solicits research proposals from small businesses that address high priority research needs of individual agencies and that have potential for commercialization. FTA looks for projects that respond to transit research needs and that, at the same time, can enhance the innovative capacity and global competitiveness of small high-tech businesses. Projects are selected through a competitive process.

The SBIR program has three phases. Phase I projects are designed to determine the feasibility of a particular product or concept and may be funded up to $100,000 for a performance period up to six months. Phase I research firms are eligible to participate in Phase II based on results of Phase I efforts, potential for commercialization, and availability of appropriated funds to support Phase II. Phase II is the principal research effort designed to develop the product or concept to the point where it is commercially viable. Phase II projects have a period of performance up to 2 years and may have a dollar value of $500,000. Phase III projects use government or private sector assistance and funding for pursuing commercial applications of R&D funded in Phases 1 and II. A Congressionally directed project.
SBIR Website [<http://www.volpe.dot.gov/sbir>].

Results Expected. Provide FTA with valuable research assistance and stimulate technological innovation and growth of small high-technology research firms.

Small Urban and Rural Transit Center
Project ND-26-7005-00
FY 2002 Funding: $400,000 Schedule: June 2002 - May 2003
Performer: North Dakota State University
Upper Great Plains Transportation Institute
PO Box 5074, Fargo, North Dakota 58105
Investigator: Jill Hough Phone: 701.231.8082 Fax: 701.231.1945,
FTA Project Manager: Lydia E. Mercado, TRI Phone: 202.366.5741 Fax: 202.366.3765
Email [lydia.mercado@fta.dot.gov]

Objective. To enhance the mobility of residents in small urban and rural communities, by providing transit users, providers, suppliers and agencies with information, knowledge and training to help them take advantage of the latest technology and management strategies. The Center offers services to North and South Dakotas, Montana, Wyoming and Western Minnesota.

Description. This project supports the efforts of the North Dakota State University (NDSU), Upper Great Plains Transportation Institute to increase ridership in small urban and rural public transportation systems through the Small Urban and Rural Transit Center (Center). The Center's mission is to increase the mobility of residents in small urban and rural areas through improved public transportation. Under this project, an Advisory Committee will be established to review and validate the proposed research activities, including a transit provider's needs assessment, and campus transit studies of North Dakota State University, Concordia College, and Minnesota State at Moorhead. In addition, the project provides for technical assistance to transition transit systems in Jamestown, Bismarck and Minot, from total demand response systems to modified fixed route systems.

Results Expected. In 2003, campus transit studies reviews will be completed along with proposed recommendations. Based on the results of transit providers' needs assessments, the Center will provide the necessary training and undertake further research to increase the mobility of residents in small urban and rural areas through improved public transportation.

Research & Technology Program Support

GOAL: Support activities to increase the transit knowledge base, exchange information, and enhance the distribution and implementation of federal research program activities and project results.

Transportation Research Board Core Program
Project DC-26-7210
FY 2002 Funding: $293,170 Schedule: September 2002 – April 2005
Performer: National Academy of Sciences, Transportation Research Board
500 Fifth Street, NW, Washington, DC 20001
Investigator: Peter Shaw Phone: 202.334.2983 Fax: 202.334.2003
FTA Project Monitor: Lisa Colbert, TRI Phone: 202.366.9157 Fax: 202.366.3765
Email [lisa.Colbert@fta.dot.gov]

Objective. Ongoing support to the core research activities of the Transportation Research Board (TRB)—a source of independent expertise that develops and disseminates innovative research information addressing transit concerns, and provides professional services and materials to assist FTA in carrying out and fulfilling its mission and legislative obligations.

Description. The Transportation Research Board (TRB) carries out many activities that benefit public transportation including the programs of FTA, the transit industry, the highway and transportation departments of the 50 states, and other organizations and individuals through out the world. TRB core research activities are designed to generate information, share ideas, and transfer knowledge about FTA Research and Technology Programs with partners in the transit industry and the general public. This project provides support for the following activities: (1) TRB Annual Meeting, including establishment of FTA-sponsored panels, and technical sessions endorsing FTA priorities; (2) Transit Research Advisory Committee, provides an independent review and assessment of future research and technology needs of the transit industry, and makes recommendations regarding the federal role in transit research; and (3) Transit Research Information Service (TRIS) online database of published research [www.ntl.bts.gov/tris], and the Research in Progress (RIP) database of unpublished research [http://rip.trb.org] made available to the transportation community-at-large.

Results Expected. FTA-sponsored technical sessions at TRB Annual Meeting in January 2004; Evolution of TRIS Online Databases; Establishment of Technical Research Advisory Committee; and Professional services and materials to assist FTA in carrying out and fulfilling its mission and legislative obligations.

Fact Finding Mission on Competitive Sourcing to New Zealand
Project Number: CA-26-7035
FY 2002 Funding: $22,732 Schedule: May 2002 – November 2003
Performer: Jim Seal Consulting Services
2431 32nd Street, Santa Monica, California 90405
Investigator: Jim Seal Phone: 310.452.4948 Fax: 310.399.0912
FTA Project Monitor: Bruce Robinson, TRI Phone: 202.366.4209 Fax: 202.366.3765
Email [bruce.robinson@fta.dot.gov]

Objective. To learn how competitive bidding is handled internationally, and to distribute these lessons learned to the U.S. transit industry, providing them additional options for financing transit systems.

Description. New Zealand is a world leader in the area of competitive bidding of public transportation services. In 1989, faced with declining transit ridership, poor service, and escalating costs, the country embarked on a policy of privatization. The policy has led to better service in newer and more efficient vehicles and at a reasonable cost. Led by FTA Administrator, FTA sponsored a workshop on competitive bidding of public transportation services in Wellington, New Zealand on May 30, 2002. The mission coincided with an American Public Transportation Association (APTA) study mission to that country and Australia that focused on innovative transit practices in New Zealand, including privatization and the introduction of hybrid electric vehicles.

Results Expected. A final workshop report will be distributed in 2003.

Sustainable Urban Transport Course at United Nations World Summit
Project MA-26-7079
FY 2002 Funding: $68,500 Schedule: May 2002 – September 2002
Performer: Boston University, Center for Transportation Studies
675 Commonwealth Avenue, Boston, Massachusetts 02215
Investigator: T.R. Lakshmanan Phone: 617.353.7551 Fax: 617.358.0205
FTA Project Monitor: Bruce Robinson, TRI Phone: 202.366.4209 Fax: 202.366.3765
Email [bruce.robinson@fta.dot.gov]

Objective. To promote United States best practices sustainable urban transportation to the world community, especially developing countries.

Description. As part of the United Nations' World Summit on Sustainable Development held in Johannesburg, South Africa, August 26 and September 6, 2002, the U.S. government organized the *Summit Institute for Sustainable Development* to offer courses in areas of U.S. expertise. The FTA International Mass Transportation Program (IMTP), in partnership with Boston University, offered a course on *Sustainable Urban Transportation* to delegates from developing countries. The course introduced participants to the concepts, methods, and successful case studies relevant to the creation and efficient operation of urban transit programs--sustainable in economic, financial, and environmental terms in developing

countries. The course was a condensed version of a month long program for transit professionals from developing countries, developed by Boston University for FTA. Given twice, the 3-day course was broken into three modules: Urban Transportation: Economic Sustainability; Sustainable Financing and Management of Urban Transportation; and Environmental and Social Sustainability of Urban Transport.

Results Expected. The course made the case for sustainable urban transportation, highlighting the experience and trends in urban transportation of U.S. and other industrialized countries, and the observable patterns of rapid urbanization and explosive motorization growth in developing countries. The course drew upon U.S. experience and successful cases in urban areas in developing countries in order to draw policy and action guidelines for planning and financial analysts, transit operators, managers, and transit environmental analysis concerned with sustainable urban transport. Copies of course readings, course program, and slide presentations are available at Internet URL [http://www.bu.edu/transportation/summit.html].

West African Sub-Regional Workshop on Transportation Infrastructure and Services Development
Project VA-26-7035
FY 2002 Funding: $65,000 Schedule: May 2002 – November 2002
Performer: Booz-Allen & Hamilton
8283 Greensboro Drive, McLean, Virginia 22102
Investigator: Donald C. Schneck Phone: 703.902.5472 Fax: 703.902.3617
FTA Project Monitor: Joel Washington, TRI Phone: 202.366.4209 Fax: 202.366.3765

Objective. To promote United States best practices in urban transit to African countries.

Description. At the request of the Government of Ghana, the FTA led a team of ten members to Accra, Ghana for a conference on Transportation Infrastructure and Services Development. The three-day conference was sponsored by the FTA and the National Transit Institute (NTI) in collaboration with the Ghana Ministry of Roads and Transport (MRT). This was the second in a series of technical workshops implemented by the FTA's International Mass Transportation Program (IMTP), and was modeled after the 2001 Bangkok International Workshop on design-build project delivery. The West African conference drew over 92 participants from Ghana and other countries including, Togo, The United Kingdom, The United States, Sierra Leone, Burkina Faso and Nigeria. In Ghana, transit is dominated by small, loosely-regulated paratransit vehicles or minibus taxis called tro-tros. Increasing motor vehicle traffic and congestion, declining levels of services, along with crime and other factors are contributing to an unfavorable transit service environment in Africa's largest cities, including Accra.

Results Expected. The conference resulted in four broad areas for consideration by the governments of the West African Sub-Region and their partners. FTA responded by offering the Ghana MRT technical assistance to establish a Public Transportation Authority, develop a Master Transportation Plan, and a National Transit Training Institute in Ghana; and to assist in obtaining a grant from the U.S. Trade Development Agency to fund a feasibility study of establishing a public transportation system in Accra, Ghana.

Human Resources

GOAL: Provide assistance for meeting Federal requirements for Title VI of the Civil Rights Acts of 1964, the Americans with Disabilities Act (ADA), and the DOT Disadvantaged Business Enterprise (DBE) regulation.

Cardozo Senior High School TransTech Academy
Project DC-26-2014
FY 2002 Funding: $110,000 Schedule: September 2002 – September 2003
Performer: District of Columbia Public Schools
825 North Capital Street, NE, Washington, DC 20001
Investigator: Shirley McCall Phone: 202.673.7533 Fax: 202.673.7754
FTA Project Monitor: Eugene Jenkins,TCR Phone: 202.366.0793 Fax: 202.366.3475
Email [Eugene.Jenkins@fta.dot.gov]

Objective. To provide inner-city high school students with a well-rounded academic and technological program that exposes them to career opportunities in the field of transportation

Description: This cooperative agreement provides ongoing support to the Transportation Technical Academy (TransTech) at Cardozo Senior High School—the first transportation studies academy in the Washington, DC area. The academy is designed to provide inner-city high school students with a well-rounded academic and technological program that exposes them to career opportunities in the field of transportation. Educational resources offered to students include after school study internships, mentoring programs, summer work programs, field trips, counseling and other resources relevant to career and education opportunities in transportation. This project supports the November 1993 Declaration of Partnership and Memorandum of Understanding between the U.S. Department of Transportation and the Superintendent of D.C. Public Schools. The partnership alliance was formed by the D.C. Public School to obtain financial, technical, and staffing resources supporting the continued operation of the TransTech Academy.

Results Expected. Continued operation of the D.C. TransTech Academy.

Compliance Assessments - ADA Complementary Paratransit
Project MA-90-8016
FY 2002 Funding: $226,085 Schedule: December 2002- December 31, 2004
Performer: Planners Collaborative, Inc.
273 Summer Street, Boston, Massachusetts 02210
Investigator: Donald Kidston Phone: 617.338.0018 Fax: 617.338.4228
FTA Project Monitor: Cheryl Hershey, TCR Phone: 202.366.0808 Fax: 202.366.3475
Email: [cheryl.hershey@fta.dot.gov]

Objective. To support compliance with the Americans with Disabilities Act (ADA), requiring public transportation services and facilities be accessible to persons with disabilities.

Description. The Americans with Disabilities Act (ADA) requires public transportation services and facilities to be accessible to persons with disabilities, including bus and bus facilities. This project will assist the FTA staff in implementing oversight responsibility. Compliance review is an ongoing civil rights effort that, in this case, includes onsite ADA compliance assessment of five ADA complementary paratransit services of selected grantees. Project activities will include compliance reviews of five grantees, a final report and follow-up action with the transit agency to ensure that recommended actions are taken to correct deficiencies identified in the compliance review within an established timeframe. These assessments not only ensure compliance with the DOT ADA regulations, they also provide technical assistance to transit agencies. FTA provides information and technical assistance to transit providers regarding the requirements of ADA and U.S. Department of Transportation ADA regulations.

Results Expected. Assessment of five ADA complementary paratransit services indicating compliance/noncompliance with DOT ADA regulations.

Compliance Reviews – Title VI Program
Project PA-26-8002
FY 2002 Funding: $200,000 Schedule: September 2002 – September 2004
Performer: John Milligan & Company, Inc.
105-107 North 22nd Street, Philadelphia, Pennsylvania 19103
Investigator: Denise Bailey Phone: 215.496.9100 Fax: 215.496.0980
FTA Project Monitor: Beverly Phipps, TCR Phone: 202.366.0809 Fax: 202.366.3475
Email [Beverly.Phipps@fta.dot.gov]

Objective. To support federal oversight responsibility of the civil rights compliance program.

Description. FTA compliance reviews and assessments are conducted to determine if grantees/transit operators are in compliance with the law, in this case with Title VI of the Civil Rights Act of 1964 programs. To be eligible for federal funding, the grant recipient must be in compliance with federal requirements. This project activity will assist the federal staff in implementing oversight responsibility. The compliance assessment includes onsite evaluation of five Title VI selected grantees/transit operators in the following cities: Baltimore, Maryland; Richmond, Virginia; and Salt Lake City, Utah. The contractor will conduct the compliance reviews and prepare a final report and follow-up action with the transit agency to ensure recommended actions are taken to correct deficiencies identified in the compliance review within an established timeframe. Acquisition of contractor support services improves the coordination and management of the civil rights compliance program.

Results Expected. Final report and follow-up actions to ensure recommended actions are taken to correct deficiencies identified in the compliance review.

Development of Title VI/Environmental Justice Compliance Procedures, Manuals, and Checklists
Project PA-26-8003
FY 2002 Funding: $200,000 Schedule: September 2002 – September 2003

Performer: John Milligan & Company, Inc.
105-107 North 22nd Street, Philadelphia, Pennsylvania 19103
Investigator: Denise Bailey Phone: 215.496.9100 Fax: 215.496.0980
FTA Project Monitor: Beverly Phipps, TCR Phone: 202.366.0809 Fax: 202.366.3475
Email [Beverly.Phipps@fta.dot.gov]

Objective. To support federal oversight responsibility of the civil rights compliance program.

Description. Federal compliance reviews and assessments are conducted to determine if grantees/transit operators are in compliance with the law, in this case with Title VI of the Civil Rights Act of 1964 programs. To be eligible for federal funding, the grant recipient must be in compliance with federal requirements. Under this project, contractor support services include development of procedures, manuals, and checklists for use in TitleVI/Environmental Justice Assessment study of FTA grantees. Support services also provide for onsite compliance reviews of six selected transit operators/grantees, preparation of a final report and follow-up action to ensure that recommended actions are taken to correct deficiencies identified in the compliance review.

Results Expected. Professional services to improve the coordination and management of the civil rights compliance program. Onsite evaluation of six Title VI transit operators.

Disadvantaged Business Enterprises Best Practices Manual (DBEs)
Project DC-26-2020.02
FY 2002 Funding: $30,000 Schedule: November 2002 – May 2003
Performer: Conference of Minority Transportation Officials
1330 Connecticut Avenue, NW, Washington, DC
FTA Project Monitor: David Solomon, TCR Phone: 202.366.4018 Fax: 202.366.3475
Email [david.Solomon@fta.dot.gov]

Objective. To develop and publish an electronic Best Practices Manual of Disadvantaged Business Enterprises (DBE) in the United States on a CD-ROM platform

Description. This project enables the Conference of Minority Transportation Officials to develop and publish a Best Practices Manual of Disadvantaged Business Enterprises (DBE) in the United States on a CD-ROM platform. Information on the current best practices of DBEs will be collected, compiled, analyzed and incorporated into a manual of best practices and written on a computerized platform. The CD-ROM will be distributed to key entities for review and comment. Once the comments are received and reviewed, a final copy of the manual will be prepared and disseminated to grantees and the public.

Results Expected. Publish a "Best Practices Manual of Disadvantaged Business Enterprises (DBE) in the United States" on a CD-ROM platform. The manual will be an important complement to the new federal regulation regarding the participation of DBEs in the U.S. Department of Transportation procurement activities.

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